K.4
12/02

American Chemical Service, Inc.

Griffith, IN

PRP Monthly Progress Reports

January 2002 - December 2002

MWH
MONTGOMERY WATSON HARZA

February 8, 2002

✓ 2/14/02

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Sean Grady
Project Manager
Indiana Department of Environmental Management
100 N. Senate Ave.
Indianapolis, Indiana 46204

Re: Progress Report – January 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Grady:

This monthly progress report is for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of January 2002. The number and letter in parenthesis at the end of each heading provide a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

Drum Removal in On-Site Containment Area (1.c.)

Destruction certificates have been received from Onyx Environmental Services for all drum and drum debris material shipped to their Port Arthur facility for disposal. No more activities are scheduled to occur on the site related to the drum removal. This item will be removed from future monthly status reports. The status of the construction completion report will be listed in the Report Schedule at the end of this report.

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.)

Ryan Construction installed additional piping and wiring in the blower shed during the week of January 7, 2002, including flexible tubing to connect the blower unit manifold and

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the ISVE yard piping at the point where the piping enters the shed. They also installed vacuum relief valves, fresh air intake piping, and piping between the blower unit and the knockout tank.

Austgen Electric installed new rigid steel conduit during the week of January 7, 2002 from the Off-Site Area blower shed to the railroad tracks that bisect the site, approximately halfway to the Groundwater Treatment Plant (GWTP). This conduit, placed at a depth of four inches below ground surface, connects to the pullbox that Midwest Environmental, Inc. (MEI) installed on January 2, 2002. MEI installed the pullbox after locating, excavating, and extracting a broken portion of the HDPE conduit running between the blower shed and GWTP. Austgen Electric successfully installed the fiber optic cable from the GWTP to the Blower Shed during the week of January 21, 2002. They are currently constructing the control panel and programmable logic control (PLC) unit off site.

Initial clean-air monitoring testing of the ISVE system was conducted during the week of January 21, 2002. Blower air was sent through the conveyance piping to the GWTP to clear the lines of any debris. Further clean-air monitoring testing of the ISVE system began January 30, 2002 and is scheduled to be completed during the week of February 4, 2002. During the testing process, each ISVE well is opened to the atmosphere and fresh air is pulled through the line into the blower shed. This testing is designed to confirm that the blower unit is functioning as designed and that the yard piping was not damaged during backfill and compaction activities. In addition, atmospheric air is pushed from the blower shed to the Groundwater Treatment Plant to confirm that the complete piping network is prepared for the start-up of the ISVE unit.

The thermal oxidizer/scrubber unit was delivered to the site on January 31, 2002. Ryan Construction will begin assembling and installing the unit and Austgen Electric will install the control system. Representatives from Durr Engineering, the oxidizer/scrubber manufacturer, will be on site the week of February 11, 2002 to perform start-up testing on the unit. The scheduled start-up date of the ISVE system is February 18, 2002.

Area Survey surveyed the as-built locations of the Off-Site Area ISVE wells January 17, 2002. They will be included in the construction completion report for the Off-Site Area ISVE system.

Operations and Maintenance of Off-Site Containment Area (OFCA) and Kapica-Pazmey (K-P) ISVE Systems for 1st 12 Months (2.c.)

Preliminary operations and maintenance (O&M) work for the Off-Site Area ISVE system is scheduled to occur during February 2002 in preparation for the February 18, 2002 planned start-up of the Off-Site Area ISVE system. The official O&M period will begin upon system start-up.

In-Situ Vapor Extraction (ISVE) Installation – Still Bottoms Pond Area (SBPA) (2.d.)

The SBPA ISVE system is scheduled to be installed beginning in October 2002.

Barrier Wall Extraction System Upgrades (BWES) of On-Site Area (3.b.2)
The On-Site Area BWES system upgrades are scheduled to begin Spring 2002.

Temporary Cover of On-Site Area (5.c.)
MWH is currently evaluating the existing grades of the former Fire Pond area and comparing them to the original design for the temporary cover. Design modifications may be needed before construction is scheduled to begin Summer 2002.

Final Cover of Off-Site Area (5.d.)
During the completion of the Off-Site Area temporary cover in August and September 2001, KES also placed the final cover over all "non-engineered cover" areas of the Off-Site Area cover. The final cover will be placed on the engineered cover areas of the Off-Site Area after the operating ISVE system is determined to be complete.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown on the attached schedule as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate a participant whose attendance is necessary. During January 2002, weekly construction meetings were held on January 10, 24, and 31. The minutes from each meeting are faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)
The Groundwater Treatment Plant (GWTP) continued to operate as designed during January 2002. The three On-Site Barrier Wall Extraction System (BWES) wells (EW-10, EW-17, EW-18), five of the Off-Site BWES wells (EW-11, EW-19, EW-20, EW-20B, EW-20C), and the Perimeter Groundwater Extraction System (PGCS) are currently bringing influent to the GWTP. The GWTP is currently bringing in 35 gpm influent water through the Barrier Wall Extraction System (BWES) and Perimeter Groundwater Extraction System (PGCS). The primary influent source is the Off-Site Area BWES system. The PGCS influent rate varies between one and three gpm.

The carbon in the Granulated Activated Carbon units (ME-33/34) is scheduled to be changed out in early February 2002. Regular carbon changeouts will likely be required until the weather gets warmer and removal efficiencies increase. Cold water bio-mass were added gradually to the activated sludge plant throughout the weeks of January 7, 14, 21, and 28, 2002 to increase the treatment efficiency of the biological treatment processes during the winter months.

The monthly effluent compliance sample for the GWTP was collected on January 28, 2001. A summary of the analytical data for this sample will be included in next month's progress report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)
The next round of groundwater monitoring is scheduled for March 2002. MWH has submitted written responses to the U.S. EPA and IDEM on December 27, 2001 regarding the Agency review comments of the proposed revised Long-Term Groundwater Monitoring Plan. Upon receiving Agency review comments, MWH will modify the plan.

Residential Well Water Quality Monitoring (B.8.)
The next annual round of residential well sampling is tentatively scheduled for September 2002.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to the U.S. EPA and IDEM.

- **Drum Removal in On-Site Containment Area (1.c.)** – the Construction Completion Report is in progress
- **PCB Sediment Excavation from Wetland (1.d.)** - the Construction Completion Report is in progress
- **Groundwater Plume Treatment (1.e.)** – a report summarizing the South Area Oxygen Releasing Compound (ORC®) Pilot Study is in progress
- BARRIER WALL EXTRACTION SYSTEM (BWES) UPGRADES (3.B.) – **THE CONSTRUCTION COMPLETION REPORT IS IN PROGRESS**
- **Temporary Engineered Cover of Off-Site Area (5.a.)** – the Construction Completion Report is in progress
- **Treatment System Monitoring (B.1, 2, 3, 4)** – the Groundwater Treatment Plant Quarterly Report, Third Quarter 2001 is in progress
- **Groundwater, Air Quality, Wetland, and Monitoring (B.7)** – the September 2001 Groundwater Monitoring Quarterly Report will be submitted to the Agencies during February 2002.

The next monthly report will be forwarded to U.S. EPA and IDEM by March 11, 2001. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH, Inc.

Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Updated Schedule of Remedial Activities

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Larry Campbell – Black & Veatch
Rob Adams – MWH
Pete Vagt – MWH
Travis Klingforth – MWH
FILE

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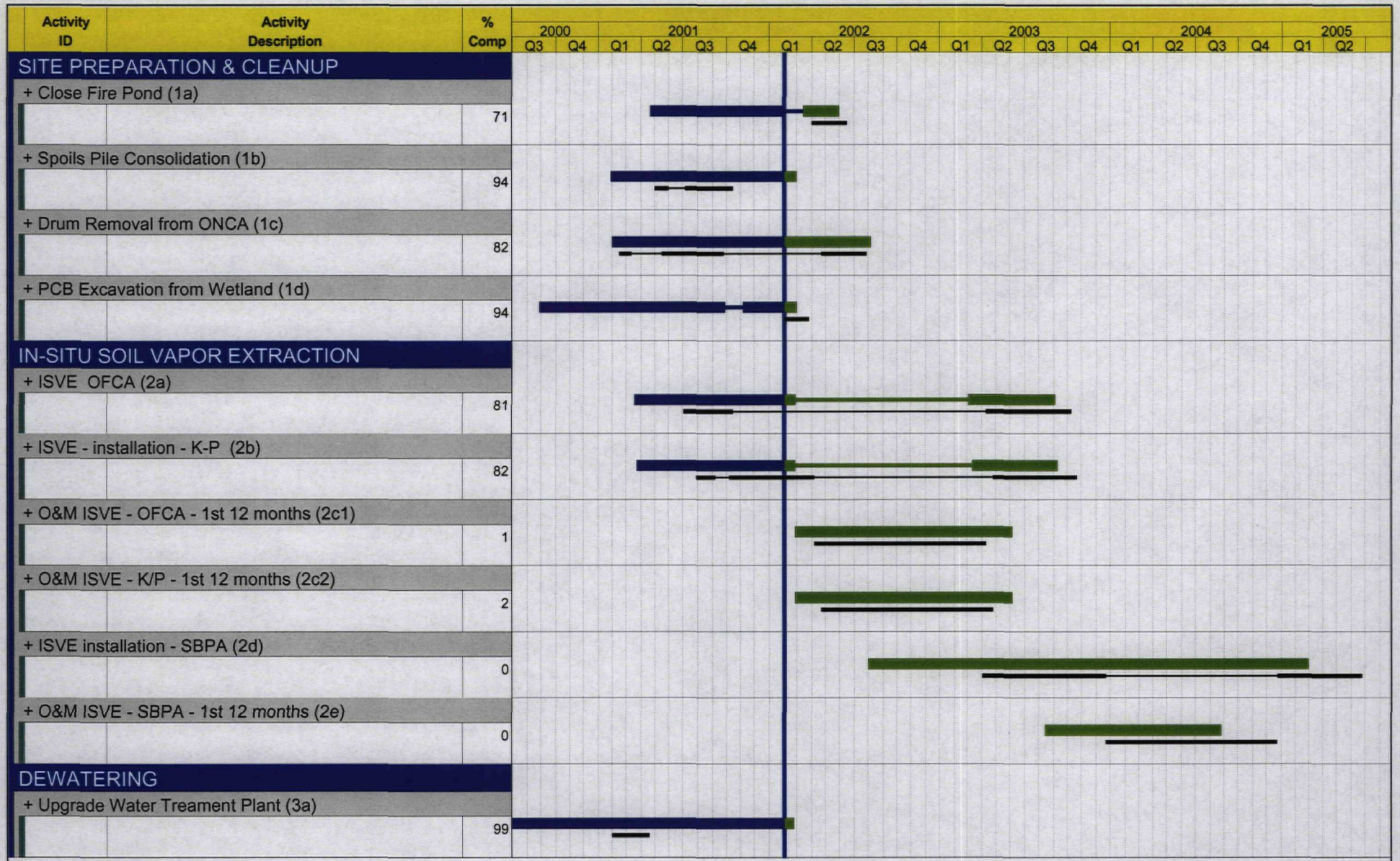

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Early Bar
Target 1
Progress Bar
Critical Activity

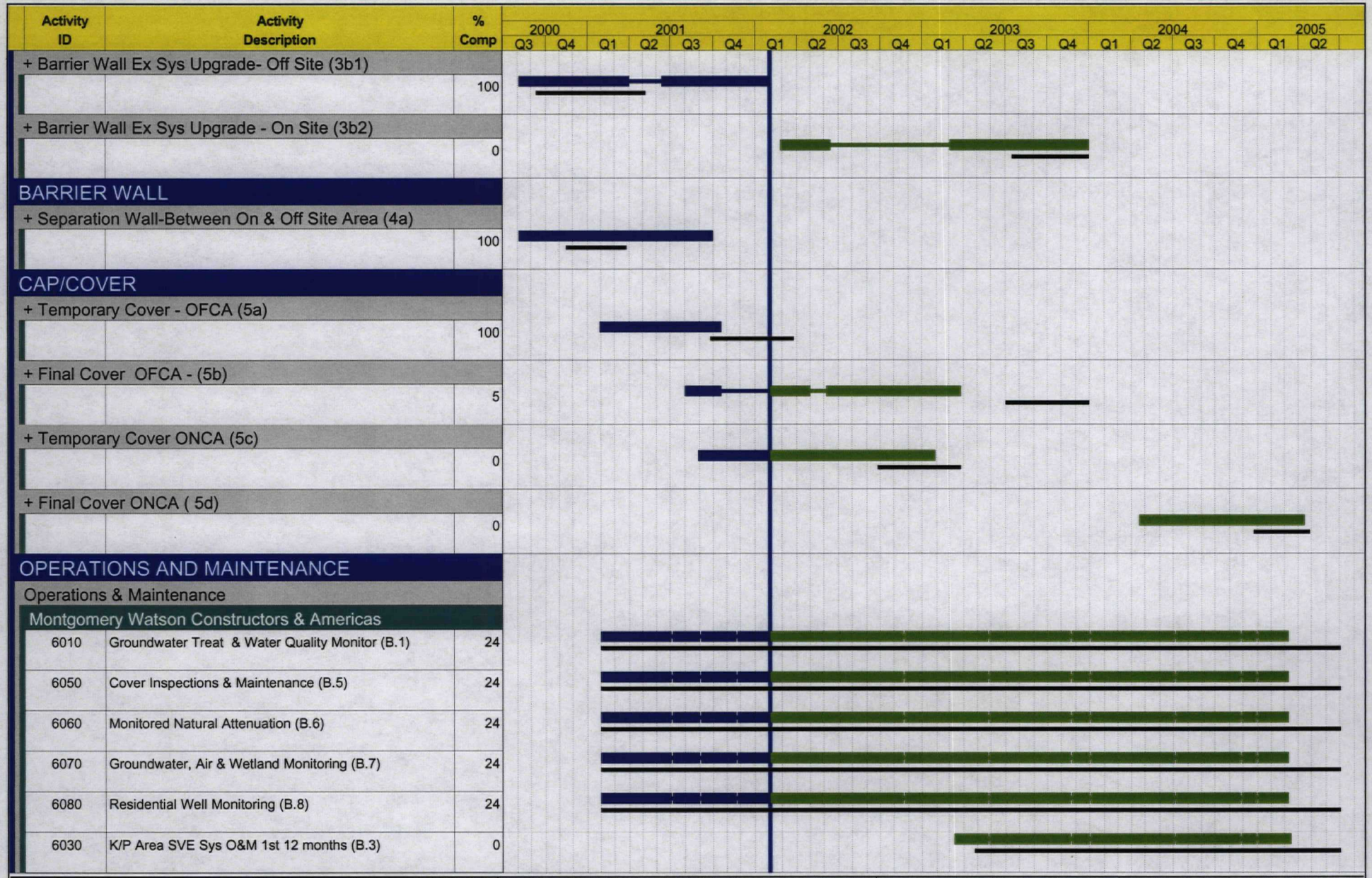
ACAK Sheet 1 of 3

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of January 2002 Report

MWH
MONTGOMERY WATSON HARZA



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Early Bar
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ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
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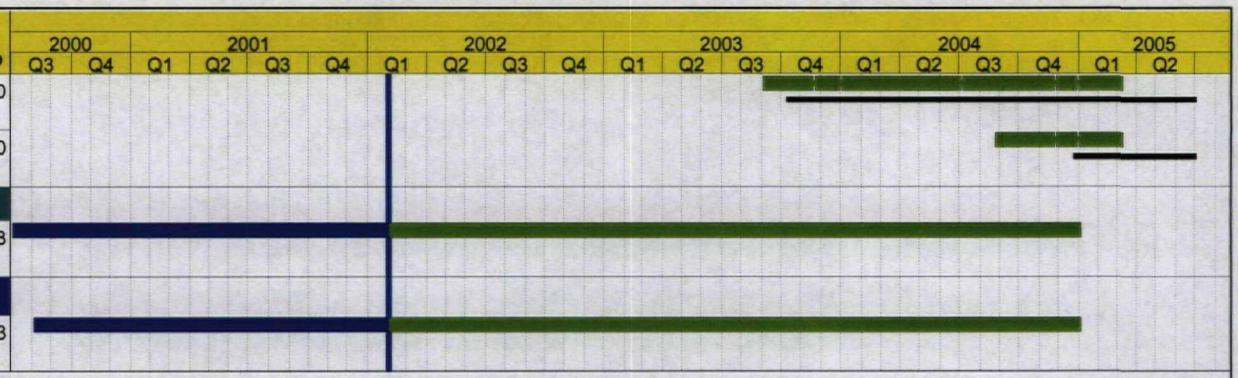
Activity ID	Activity Description	% Comp
6020	OFCA SVE Sys O&M 1st 12 months (B.2)	0
6040	SBPA SVE Sys O&M after 1st 12 months (B.4)	0
+ Montgomery Watson Americas		28
+ MANAGEMENT		33



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Early Bar
Target 1
Progress Bar
Critical Activity

ACAK

Sheet 3 of 3

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of January 2002 Report

MWH
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MWH
MONTGOMERY WATSON HARZA

March 8, 2002

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

✓ KA. 3/14/02

See note p 4.

Sean Grady
Project Manager
Indiana Department of Environmental Management
100 N. Senate Ave.
Indianapolis, Indiana 46204

Re: Progress Report – February 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Grady:

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CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.)
Additional clean-air monitoring testing of the ISVE system began January 30, 2002 and was completed on February 6, 2002. During the testing process, the ability to monitor the parameters required per the Performance Standard Verification Plan (PSVP) was verified. Flow from each well was also verified.

As reported in last month's progress report, the thermal oxidizer/scrubber unit was delivered to the site on January 31, 2002. Ryan Construction continues to assemble and install the unit and Austgen Electric is installing the control system. A representative from Durr Engineering, the oxidizer/scrubber manufacturer, was on site during the week of February 18, 2002 to perform the startup testing of the thermal oxidizer/scrubber system.

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Initial troubleshooting of the thermal oxidizer system was begun during the week of February 18, 2002. Durr continues to "cure" the clay refractory lining in the combustion chamber by slowly removing moisture from the lining.

Troubleshooting of the thermal oxidizer/scrubber system is scheduled to continue through the week of March 4, 2002. The work has been delayed due to missing/malfunctioning parts on the system that were discovered during inspection of the delivered unit, however the missing and replacement items are currently on site. Ryan Construction is on site re-sealing flanges on scrubber because the sealant/gasket materials did not meet the operational requirements during the clean water test.

MWH completed water level gauging on February 6, 2002 in all the ISVE wells. Analysis of the data indicates the dewatering efforts in the Off-Site Area are proceeding well. MWH is still evaluating the depth of water and unsaturated ISVE well screen intervals to determine system startup options. A Flame Ionization Detector (FID) has been purchased for ISVE system monitoring. It will be used to complete a baseline vapor survey in the blower shed and around the thermal oxidizer/scrubber system prior to system operation.

Operations and Maintenance of Off-Site Containment Area (OFCA) and Kapica-Pazmey (K-P) ISVE Systems for 1st 12 Months (2.c.)
Preliminary operations and maintenance (O&M) work for the Off-Site Area ISVE system is scheduled to occur during March 2002 in preparation for the April 1, 2002 planned start-up of the Off-Site Area ISVE system. The official O&M period will begin upon system start-up.

In-Situ Vapor Extraction (ISVE) Installation – Still Bottoms Pond Area (SBPA) (2.d.)
The SBPA ISVE system is scheduled to be installed beginning in October 2002.

Barrier Wall Extraction System Upgrades (BWES) of On-Site Area (3.b.2)
The On-Site Area BWES system upgrades are scheduled to be installed as part of the SBPA ISVE system (2.d.) in October 2002.

Interim Cover of On-Site Area (5.c.)
MWH is currently evaluating the existing grades of the former Fire Pond area and comparing them to the original design for the interim cover. Design modifications may be needed before construction is scheduled to begin summer 2002.

Final Cover of Off-Site Area (5.d.)
During the completion of the Off-Site Area interim cover in August and September 2001, KES also placed the final cover over all "non-high density polyethylene (HDPE) cover" areas of the Off-Site Area cover. The final cover will be placed on the HDPE cover areas of the Off-Site Area after the operating ISVE system is determined to be complete.

Austgen Electric, as subcontractor to Koester Environmental Services, completed repair of a portion of drainage swale 1 approximately 75 feet long near the northeast gate of the Off-Site Area. Work was completed on February 22, 2002. Repair included the following

steps: the swale was pulled apart, silt was removed, new erosion mat was installed, and the riprap was replaced.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate a participant whose attendance is necessary. During February 2002, weekly construction meetings were held on February 7, 14, 21, and 28. The minutes from each meeting are faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)

The Groundwater Treatment Plant (GWTP) continued to operate as designed during February 2002. The three On-Site Barrier Wall Extraction System (BWES) wells (EW-10, EW-17, EW-18), five of the Off-Site BWES wells (EW-11, EW-15, EW-16, EW-19, EW-19A), and the Perimeter Groundwater Extraction System (PGCS) are currently bringing influent to the GWTP. The GWTP is currently bringing in approximately 30 gallons per minute (gpm) influent water. The primary influent source is the Off-Site Area BWES system. The PGCS influent rate varies between one and three gpm.

The January 2002 monthly effluent compliance sample for the GWTP was collected on January 28. Analytical results of this sample indicated a biochemical oxygen demand (BOD) and an acetone effluent exceedence. The sample had a BOD result of 62 mg/L and an acetone result of 8,000 µg/L. The effluent limit for BOD is 30 mg/L and the effluent limit for acetone is 6,800 µg/L. These exceedences were reported to the U.S. EPA and IDEM immediately upon receiving the data, and a separate letter was submitted to the Agencies on February 20, 2002 summarizing the potential causes of the exceedences and the proactive and corrective actions conducted. A summary of the analytical data for this sample is included in Table 2.2 attached to this report.

Proactive and corrective actions were taken to address the January 28 compliance sample exceedences. These actions included changing out the carbon in the Granulated Activated Carbon units (ME-33/34) on February 5, 2002 and continuing to add biomass to the activated sludge plant through seeding with "cold weather bugs" to increase the treatment efficiency of the biological treatment processes during the winter months.

It was determined that EW-12 was contributing a large amount of the acetone to the GWTP influent stream so flow from EW-12 was decreased and isolated from the other wells. In

addition, MWH continues to evaluate insulating and heating alternatives for the activated sludge plant. Work associated with this item would most likely be performed in the summer.

Also, EW-12 decreased acetone input levels →

The February 2002 compliance sample was collected February 13 and BOD and acetone laboratory analysis was expedited. The sample results indicated BOD discharge levels were approximately one-half of the discharge limits, serving as one indicator that the microbial population in the activated sludge plant is improving. The sample results also indicated that acetone discharge levels were less than one-tenth of the discharge limits, thus demonstrating that the system effluent is meeting the discharge requirements. A summary of the analytical data for this sample is included in Table 2.2 attached to this report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)
MWH is currently revising the Groundwater Monitoring Plan based on additional U.S. EPA and IDEM comments. The March groundwater monitoring event is scheduled for March 18-22, 2002. This event will include sampling 31 wells for volatile organic compounds (VOCs) and 3 wells for semi-volatile organic compounds (SVOCs). Prior to the sampling event, during the week of March 11, 2002, Mid-America Drilling will abandon piezometers P-61 and P-62. Monitoring well MW-18 is also scheduled for abandonment as soon as the property owner can be contacted and provide approval for the procedure. Piezometers P-61 and P-62 are damaged and MW-18 is an upgradient well that is currently obstructed. Existing monitoring well MW-17 will be redeveloped prior to the March 2002 sampling event to take the place of MW-18 in the revised groundwater monitoring sampling plan.

Residential Well Water Quality Monitoring (B.8.)
The next annual round of residential well sampling is tentatively scheduled for September 2002.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to the U.S. EPA and IDEM.

- **Drum Removal in On-Site Containment Area (1.c.)** – the Construction Completion Report is being prepared
- **PCB Sediment Excavation from Wetland (1.d.)** - the Construction Completion Report is being prepared
- **Groundwater Plume Treatment (1.e.)** – a report summarizing the South Area Oxygen Releasing Compound (ORC®) Pilot Study is being prepared

- **Groundwater Treatment Plant Upgrade (3.a.)** – the as-built drawings are being prepared

- **Barrier Wall Extraction System (BWES) Upgrades (3.b.)** – the Construction Completion Report is being prepared

- **Separation Barrier Wall Between On-Site and Off-Site Areas (4.a.)** – MWH is responding to comments submitted by the U.S. EPA regarding the Construction Completion Report submitted in December 2001.

- **Temporary Engineered Cover of Off-Site Area (5.a.)** – the Construction Completion Report is being prepared

- **Treatment System Monitoring (B.1, 2, 3, 4)** – the Groundwater Treatment Plant Quarterly Report, Third Quarter 2001 is being prepared

- **Groundwater, Air Quality, Wetland, and Monitoring (B.7)** – the September 2001 Groundwater Monitoring Quarterly Report was submitted to the Agencies on February 12, 2002.

The next monthly report will be forwarded to U.S. EPA and IDEM by April 10, 2001. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH, Inc.

for

Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Updated Schedule of Remedial Activities
Table 2.2 – Summary of Effluent Analytical Results – First Quarter 2002

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Larry Campbell – Black & Veatch
Rob Adams – MWH
Pete Vagt – MWH
Travis Klingforth – MWH
FILE

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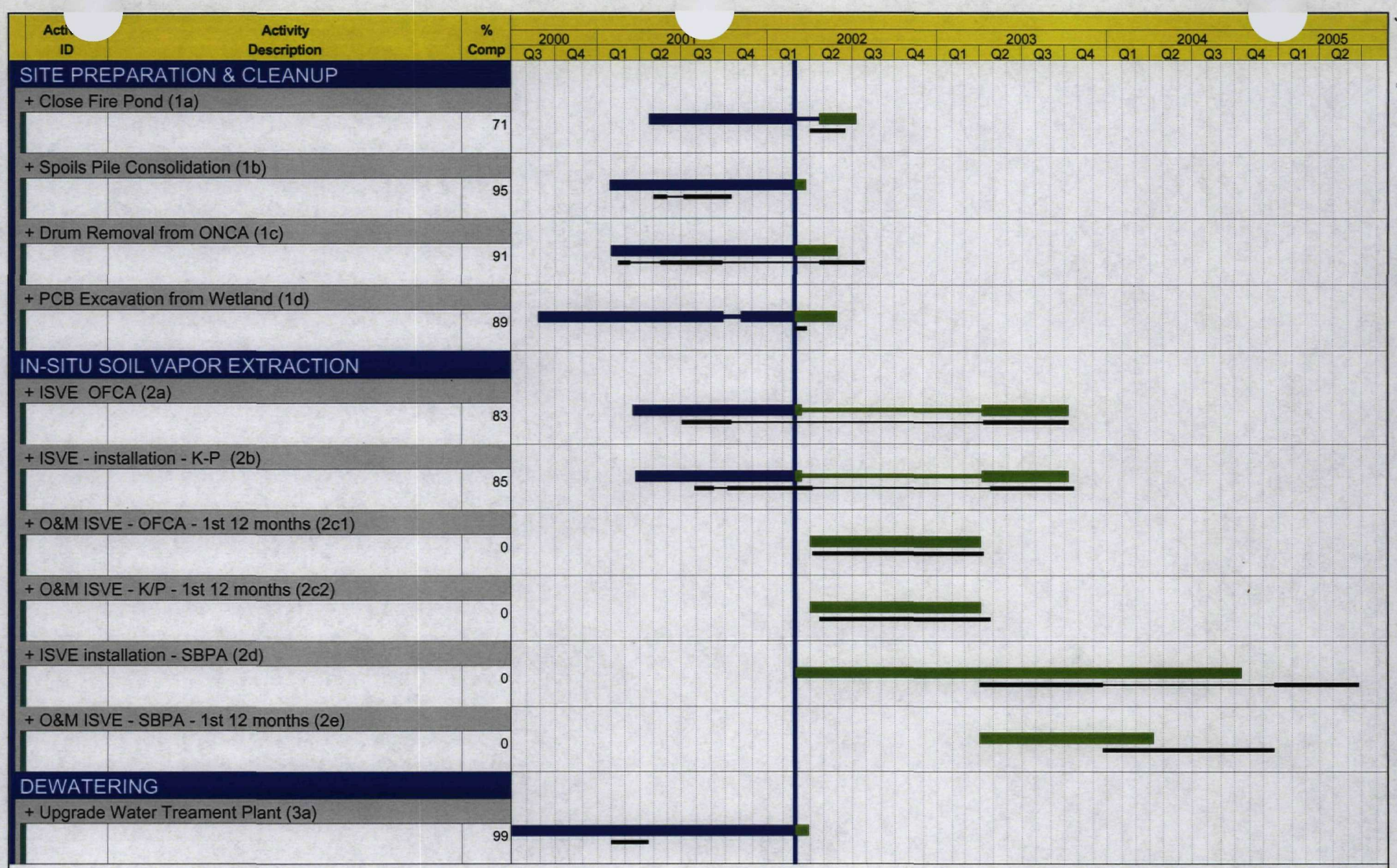

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Early Bar
Target 1
Progress Bar
Critical Activity

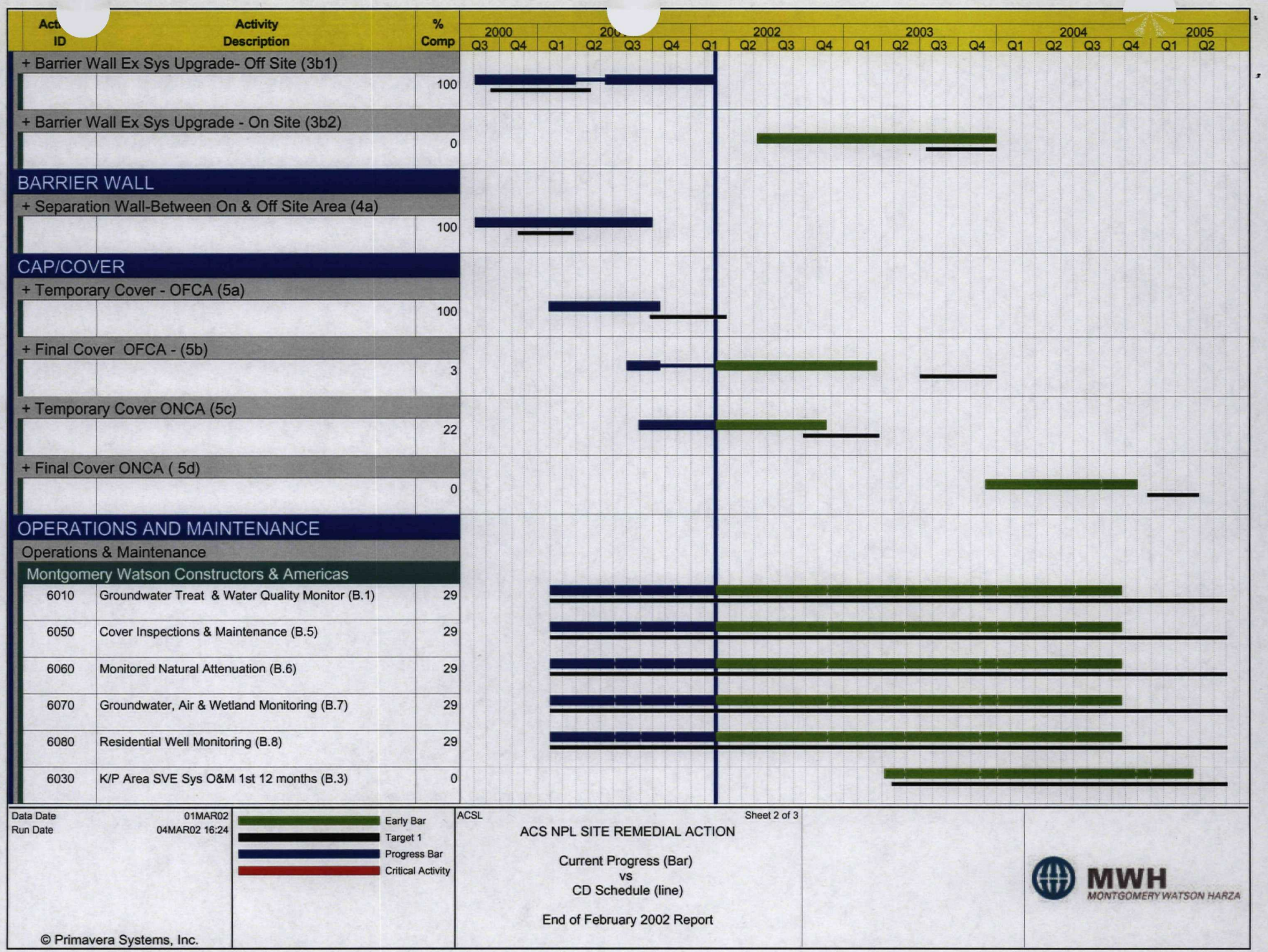
ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of February 2002 Report

MWH
MONTGOMERY WATSON HARZA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Activity Description
% Comp
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Q3 Q4
Q1 Q2 Q3 Q4
2002
Q1 Q2 Q3 Q4
2003
Q1 Q2 Q3 Q4
2004
Q1 Q2 Q3 Q4
2005
Q1 Q2
+ Barrier Wall Ex Sys Upgrade- Off Site (3b1)
100
+ Barrier Wall Ex Sys Upgrade - On Site (3b2)
0
BARRIER WALL
+ Separation Wall-Between On & Off Site Area (4a)
100
CAP/COVER
+ Temporary Cover - OFCA (5a)
100
+ Final Cover OFCA - (5b)
3
+ Temporary Cover ONCA (5c)
22
+ Final Cover ONCA (5d)
0
OPERATIONS AND MAINTENANCE
Operations & Maintenance
Montgomery Watson Constructors & Americas
6010 Groundwater Treat & Water Quality Monitor (B.1) 29
6050 Cover Inspections & Maintenance (B.5) 29
6060 Monitored Natural Attenuation (B.6) 29
6070 Groundwater, Air & Wetland Monitoring (B.7) 29
6080 Residential Well Monitoring (B.8) 29
6030 K/P Area SVE Sys O&M 1st 12 months (B.3) 0
Data Date 01MAR02
Run Date 04MAR02 16:24
Early Bar
Target 1
Progress Bar
Critical Activity
ACSL
Sheet 2 of 3
ACS NPL SITE REMEDIAL ACTION
Current Progress (Bar)
vs
CD Schedule (line)
End of February 2002 Report
MWH
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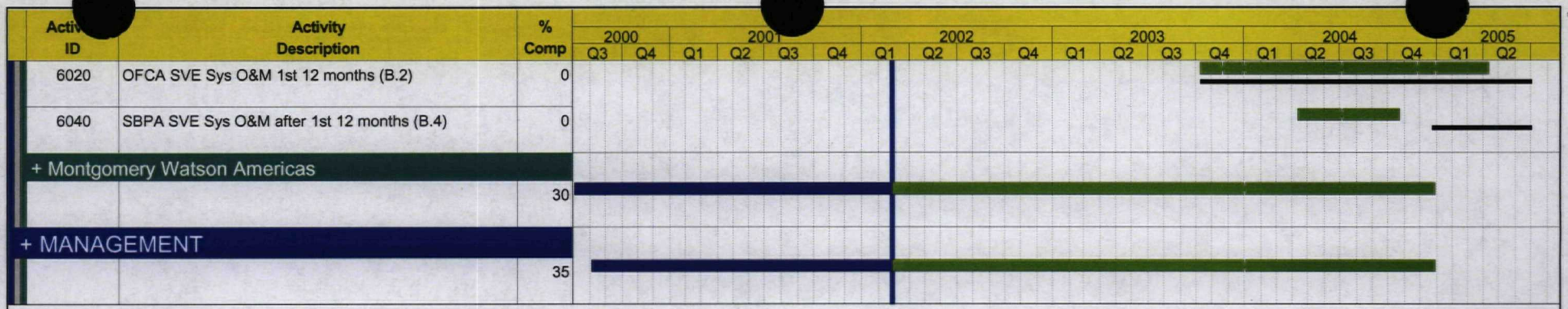

Data Date 01MAR02
Run Date 04MAR02 16:24

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of February 2002 Report

MWH
MONTGOMERY WATSON HARZA

Table 2.2
Summary of Effluent Analytical Results - First Quarter 2002
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 56 1/28/02	Month 57 2/13/02	Effluent Limits	Lab Reporting
pH	7.27	7.66	6-9	none
TSS	10.30	8.00	30	10
BOD	62	14	30	2
Arsenic	2.0 B/	ND	50	3.4
Beryllium	ND	ND	NE	0.2
Cadmium	ND	ND	4.1	0.3
Manganese	109	41.2	NE	10
Mercury	ND	ND	0.02 (w/DL = 0.64)	0.64
Selenium	2.6 B/	3.0 B/	8.2	4.3
Thallium	ND	ND	NE	5.7
Zinc	ND	ND	411	1.2
Benzene	ND	ND	5	0.5
Acetone	8,000 D/	450 DB/	6,800	3
2-Butanone	ND	2 J/	210	3
Chloromethane	ND	ND	NE	0.5
1,4-Dichlorobenzene	ND	ND	NE	0.5
1,1-Dichloroethane	ND	ND	NE	0.5
cis-1,2-Dichloroethene	ND	ND	70	0.5
Ethylbenzene	ND	ND	34	0.5
Methylene chloride	0.6 B/	ND	5	0.6
Tetrachloroethene	ND	ND	5	0.5
Trichloroethene	ND	ND	5	0.5
Vinyl chloride	ND	ND	2	0.5
4-Methyl-2-pentanone	ND	ND	15	3
bis (2-Chloroethyl) ether	ND	ND	9.6	9.6
bis(2-Ethylhexyl) - phthalate	0.95 JB/	ND	6	6
4 - Methylphenol	ND	ND	34	10
Isophorone	ND	ND	50	10
Pentachlorophenol	ND	ND	1	1
PCB/Aroclor-1016	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:
Data has not yet been validated
Shaded cells indicate discharge exceedances
pH data is expressed in S.U.
TSS and BOD5 data is expressed in mg/L
Metals, VOC, SVOC and PCB data is expressed in ug/L
ND = Not detected
NE = No effluent limit established.
NA = Sample not analyzed for this compound
* = Approved SW-846 method is incapable of achieving effluent limit.

Suffix Definitions:
_/ = Data qualifier added by laboratory
/_ = Data qualifier added by data validator
B = Compound is also detected in the blank
E = Compound exceeds the upper level of calibration range of instrument
J = Result is detected below the reporting limit and is an estimated concentration
Q = Sample was analyzed out of the recommended holding time
R = Quality control indicates the data is not usable
JB = Analyte is detected in the compliance sample below the reporting limit and is an estimated concentration and the compound is also detected in the method blank resulting in a potential high bias
U = Analyte is not detected at or above the indicated concentration
UB = Analyte is not detected at or above the indicated concentration due to blank contamination
UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
D = Result obtained after diluting sample

MWH
MONTGOMERY WATSON HARZA

April 9, 2002

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

✓ KA. 4/18/02

Sean Grady
Project Manager
Indiana Department of Environmental Management
100 N. Senate Ave.
Indianapolis, Indiana 46204

Re: Progress Report – March 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Grady:

This monthly progress report is for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of March 2002. The number and letter in parenthesis at the end of each heading provide a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.)
Austgen Electric delivered the programmable logic center (PLC) for the In-Situ Vapor Extraction (ISVE) system to the Off-Site Area blower shed on March 15. Austgen began installation of the PLC on March 18. They also began replacing parts on the pH control system and scrubber pumps as needed. Ryan Construction was on site throughout March performing various installation tasks. The piping work required for the ISVE system was substantially completed during the week of March 18.

A representative from Durr Engineering, the oxidizer/scrubber manufacturer, was on site during the weeks of March 4, March 11, and March 25 to continue the oxidizer/scrubber

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system testing and startup. Austgen Electric and Ryan Construction were on site to assist Durr in performing various tasks integral to the startup process. These tasks included replacing gaskets on the scrubber flanges, rewiring the chart recorder, and installing an additional input card on the PLC.

As part of the system testing conducted by Durr, vapor was extracted from a group of ISVE wells and the ISVE blower was operated to simulate normal operating conditions. Initial high concentrations of volatile organic carbons (VOCs) in the vapor stream resulted in overheating of the thermal oxidizer. Flow from the well field was reduced and the ambient air valves were opened. At these settings, the thermal oxidizer was able to sustain combustion temperatures without the addition of natural gas.

Due to delays experienced during system completion and testing, ISVE system start-up is currently scheduled to occur by April 8. Initial thermal oxidizer sampling is scheduled to begin during the first week of ISVE system start-up.

Heritage Industrial cleared vapor conveyance piping to Off-Site Area vapor extraction well SVE-7 of excess water on April 1. Heritage also pressure tested the line at this time.

Heritage has also been contacted to finish the reconstruction of the clay cover in the Off-Site Area. Patrick Environmental will perform compaction testing in the areas where ISVE conveyance piping was installed and conduct additional compaction as necessary. Compaction testing was scheduled to begin on April 2 but has been rescheduled for mid-April due to inclement weather.

Routine inspection of the Off-Site Area in accordance with the Stormwater Pollution Prevention Plan (SWPPP) has identified portions of the silt fencing that will require maintenance and/or repair. Security Fence Company has been contacted to install additional silt fence in these areas. Due to damp soil conditions during the end of March, they are scheduled to begin work during the week of April 8.

Operations and Maintenance of Off-Site Containment Area (OFCA) and Kapica-Pazmey (K-P) ISVE Systems for 1st 12 Months (2.c.)

Preliminary operations and maintenance (O&M) work for the Off-Site Area ISVE system is scheduled to occur during April 2002 in preparation for the scheduled April 8, 2002 start-up of the Off-Site Area ISVE system. The official O&M period will begin upon system start-up.

Interim Cover of On-Site Area (5.c.)

MWH is currently evaluating the existing grades of the former Fire Pond area and comparing them to the original design for the interim cover. Design adjustments will be made to accommodate existing conditions before construction is scheduled to begin in the summer of 2002.

Final Cover of Off-Site Area (5.d.)
During the completion of the Off-Site Area interim cover in August and September 2001, KES also placed the final cover over all "non-high density polyethylene (HDPE) cover" areas of the Off-Site Area cover. The final cover will be placed on the HDPE cover areas of the Off-Site Area after the operating ISVE wells are determined to be complete.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate a participant whose attendance is necessary. During March 2002, weekly construction meetings were held on the 7th, 14th, 21st, and 28th. The minutes from each meeting are faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)
The Groundwater Treatment Plant (GWTP) continued to operate as designed during March 2002. The three On-Site Barrier Wall Extraction System (BWES) wells (EW-10, EW-17, EW-18), seven of the Off-Site BWES wells (EW-11, EW-12, EW-15, EW-16, EW-19, EW-19A, and EW-20), and the Perimeter Groundwater Extraction System (PGCS) are currently bringing influent to the GWTP. The GWTP is currently treating approximately 45 gallons per minute (gpm) influent water. Approximately 20 gpm are being pumped from On-Site Area wells and approximately 20-25 gpm are being pumped from Off-Site Area wells. The PGCS influent rate ranges up to three gpm.

The March 2002 monthly effluent compliance sample for the GWTP was collected on March 7. Analytical results of this sample indicated no exceedences of discharge limits. A summary of the analytical data for this sample is included in Table 2.2 attached to this report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)
MWH received some minor additional comments from the Agencies on the Long-Term Groundwater Monitoring Plan (the Plan) on March 11. MWH provided responses by email on March 12. The Agencies agreed that all substantive issues had been satisfactorily addressed and so the March 2002 monitoring event proceeded on March 18.

The groundwater monitoring took four days from March 18 to 21, 2002. This event included sampling 32 wells for volatile organic compounds (VOCs), 3 wells for bis (2-chloroethyl) ether, and 3 wells for arsenic, per the revised Plan. Monitoring well MW-17 was redeveloped on March 12. MW-17 was redeveloped to take the place of MW-18 in the sampling plan. Analytical results from the March sampling round are included in attached Tables 1 and 2. These results have not yet been validated.

Piezometers P-61 and P-62 and monitoring well MW-18 were abandoned on March 26. Piezometers P-61 and P-62 had been damaged and MW-18 was an upgradient well in the upper aquifer that had become obstructed. During discussions to finalize the Long Term Groundwater Monitoring Plan, MWH had proposed that MW-18 be abandoned and that MW-17 replace it as an upgradient well east of the Site. The Agencies had approved this plan.

Residential Well Water Quality Monitoring (B.8.)
The next annual round of residential well sampling is scheduled for September 2002.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to the U.S. EPA and IDEM.

- **Drum Removal in On-Site Containment Area (1.c.)** – the Construction Completion Report is being prepared.

- **PCB Sediment Excavation from Wetland (1.d.)** - the Construction Completion Report is being prepared.

- **Groundwater Plume Treatment (1.e.)** – a report summarizing the South Area Oxygen Release Compound (ORC®) Pilot Study is being prepared.

- **Groundwater Treatment Plant Upgrade (3.a.)** – the as-built drawings are being prepared. They will be submitted to the Agencies, along with a brief summary of the construction upgrade process.

- **Barrier Wall Extraction System (BWES) Upgrades (3.b.)** – the Construction Completion Report is being prepared.

- **Separation Barrier Wall Between On-Site and Off-Site Areas (4.a.)** – On March 19, MWH submitted to the Agencies a response to the December 2001 U.S. EPA comments regarding the Separation Barrier Wall Construction Completion Report. A revised Construction Completion Report was also submitted at the same time.

- **Interim Engineered Cover of Off-Site Area (5.a.)** – the Construction Completion Report is being prepared.

- **Treatment System Monitoring (B.1, 2, 3, 4)** – the Groundwater Treatment Plant Quarterly Report, Third Quarter 2001 is being prepared.

- **Groundwater, Air Quality, Wetland, and Monitoring (B.7)** – the March 2002 Groundwater Monitoring Quarterly Report is being prepared.

The next monthly report will be forwarded to U.S. EPA and IDEM by May 10, 2001. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH, Inc.

for

Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Updated Schedule of Remedial Activities
Table 2.2 – Summary of Effluent Analytical Results – First Quarter 2002
Table 1 – Summary of Upper Aquifer Analytical Results - March 2002
Table 2 – Summary of Lower Aquifer Analytical Results - March 2002

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Larry Campbell – Black & Veatch
Rob Adams – MWH
Pete Vagt – MWH
Travis Klingforth – MWH
FILE

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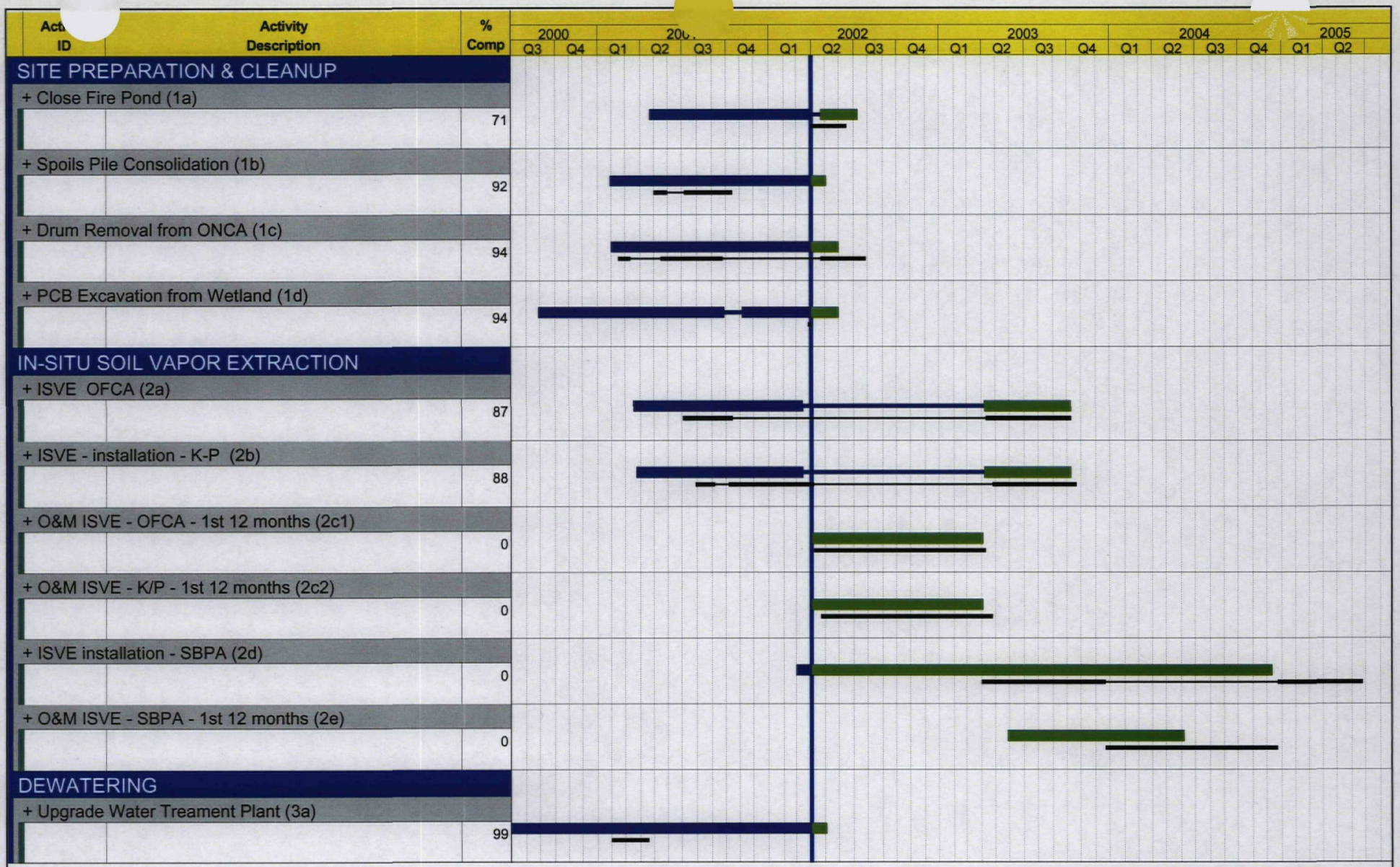

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Run Date 08APR02 15:04

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of March 2002 Report

MWH
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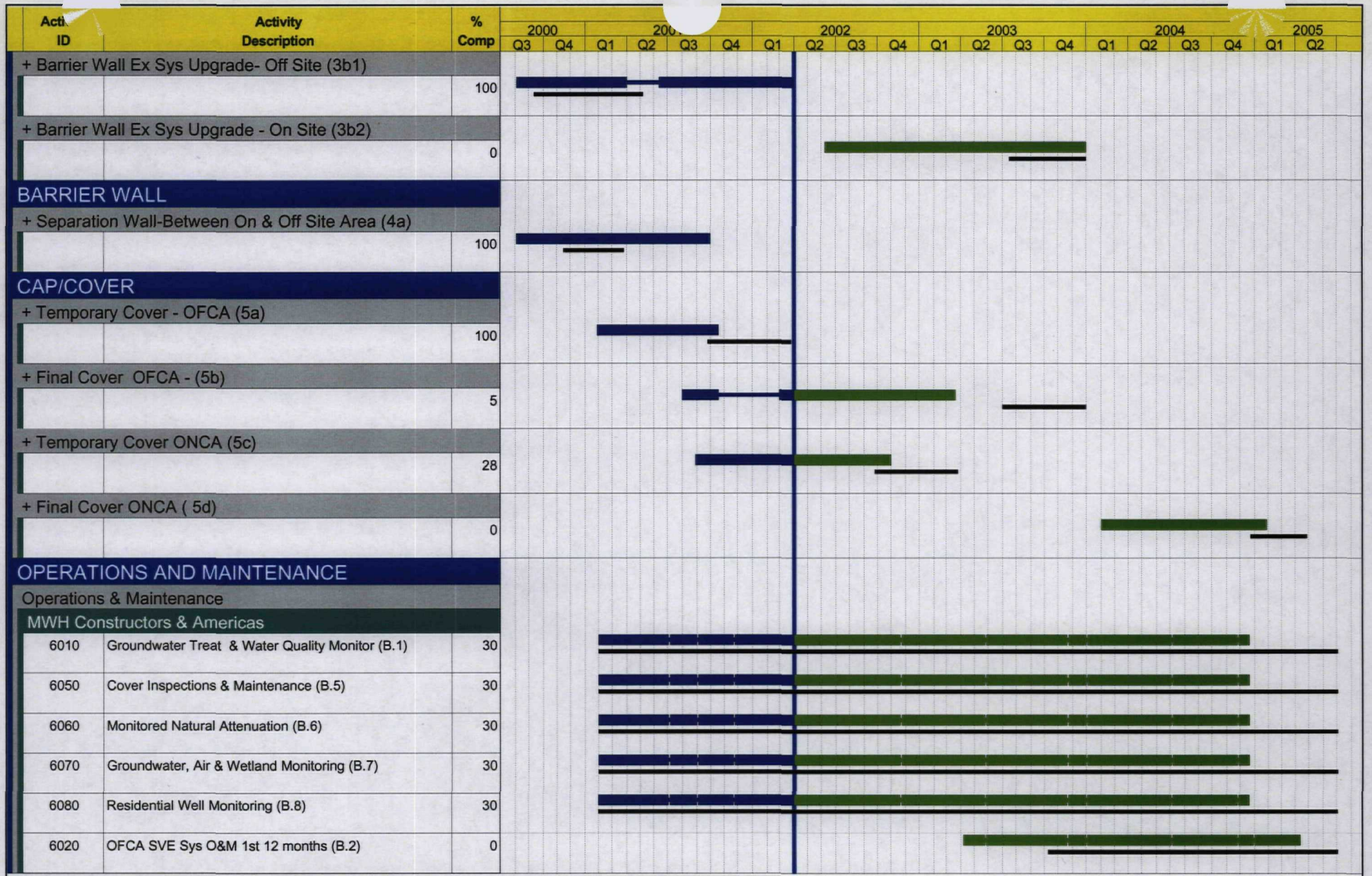

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Early Bar
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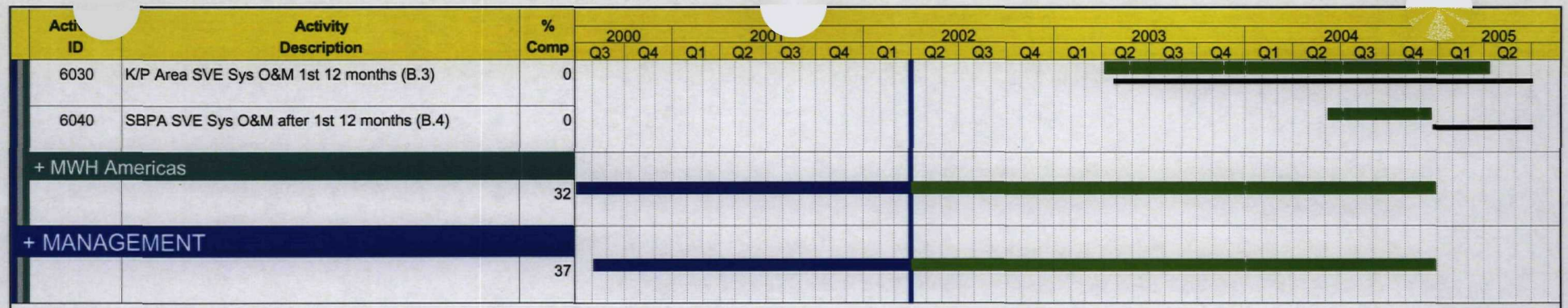
ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of March 2002 Report

MWH
MONTGOMERY WATSON HARZA



Data Date 01APR02
Run Date 08APR02 15:04

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of March 2002 Report

MWH
MONTGOMERY WATSON HARZA

Table 2.2
Summary of Effluent Analytical Results - First Quarter 2002
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 58 3/7/02	Effluent Limits	Lab Reporting
pH	7.65	6-9	none
TSS	2.4	30	10
BOD	10.5	30	2
Arsenic	ND	50	3.4
Beryllium	ND	NE	0.2
Cadmium	ND	4.1	0.3
Manganese	2.2 B/	NE	10
Mercury	ND	0.02 (w/DL = 0.64)	0.64
Selenium	ND	8.2	4.3
Thallium	ND	NE	5.7
Zinc	ND	411	1.2
Benzene	ND	5	0.5
Acetone	2,200 DB/	6,800	3
2-Butanone	ND	210	3
Chloromethane	ND	NE	0.5
1,4-Dichlorobenzene	ND	NE	0.5
1,1-Dichloroethane	ND	NE	0.5
cis-1,2-Dichloroethene	ND	70	0.5
Ethylbenzene	1	34	0.5
Methylene chloride	0.1 J/	5	0.6
Tetrachloroethene	ND	5	0.5
Trichloroethene	ND	5	0.5
Vinyl chloride	ND	2	0.5
4-Methyl-2-pentanone	ND	15	3
bis (2-Chloroethyl) ether	ND	9.6	9.6
bis(2-Ethylhexyl) - phthalate	0.8 JB/	6	6
4 - Methylphenol	ND	34	10
Isophorone	ND	50	10
Pentachlorophenol	ND	1	1
PCB/Aroclor-1016	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	ND	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:
Data has not yet been validated
Shaded cells indicate discharge exceedances
pH data is expressed in S.U.
TSS and BOD5 data is expressed in mg/L
Metals, VOC, SVOC and PCB data is expressed in ug/L
ND = Not detected
NE = No effluent limit established.
NA = Sample not analyzed for this compound
* = Approved SW-846 method is incapable of achieving effluent limit.

Suffix Definitions:
_/ = Data qualifier added by laboratory
/_ = Data qualifier added by data validator
B = Compound is also detected in the blank
E = Compound exceeds the upper level of calibration range of instrument
J = Result is detected below the reporting limit and is an estimated concentration
Q = Sample was analyzed out of the recommended holding time
R = Quality control indicates the data is not usable
JB = Analyte is detected in the compliance sample below the reporting limit and is an estimated concentration and the compound is also detected in the method blank resulting in a potential high b
U = Analyte is not detected at or above the indicated concentration
UB = Analyte is not detected at or above the indicated concentration due to blank contamination
UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection limit i estimated value
D = Result obtained after diluting sample

Table 1
Summary of Upper Aquifer Analytical Results - March 2002
American Chemical Service NPL Site
Griffith, Indiana

DRAFT
UNVALIDATED
RESULTS

Parameter (ug/L)	MW-06			MW-11			MW-12			MW-13			MW-14			MW-15			MW-17			MW-19			MW-37		
	Mar-02		*BV*	Mar-02		*BV*	Mar-02		*BV*	Mar-02		*BV*	Mar-02		*BV*	Mar-02		*BV*	Mar-02		*BV*	Mar-02		*BV*	Mar-02		*BV*
VOCs																											
Benzene	***370***	D/	*320*	5	U/		5	U/		5	U/		**1**	J/	*41*	5	U/		5	U/		**4**	J/	*10*	5	U/	
Chloroethane	**190**		*720*	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		***25***		*20*	5	U/	
Tetrachloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		**8**			5	U/		5	U/	
Trichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,2-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
cis-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
trans-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Vinyl Chloride	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Chlorobenzene	5	U/		5	U/		**2**	J/	*10*	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Chloroform	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Toluene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		**1**	JB/	*10*	5	U/	
1,2-Dichlorobenzene	5	U/		5	U/.		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Carbon disulfide	5	U/		5	U/		5	U/		5	U/		**4**	J/	*100*	5	U/		**12**			5	U/		5	U/	
SVOCs (ug/L)																											
Bis(2-chloroethyl)ether	**10**	J/	*56*	NA			NA			NA			NA			NA			NA			**12**		*12*	NA		
Inorganics																											
Arsenic	**17.3**		*72*	NA			NA			NA			NA			**37.4**		*59*	NA			NA			NA		

Notes:
ug/L = micrograms per liter.
BV = Baseline Value (only provided for detected compounds)
NA = Not Analyzed
X/_ = Data qualifier added by laboratory
_/X = Data qualifier added by data validator
U = Indicates compound was analyzed for but not detected
B = Indicates analyte found in associated blank
D = Results based on diluted sample
Bold result indicates the compound was detected above the reporting limit
Bold and Italic results indicates the an exceedance of the baseline value of that compound.

Table 1
Summary of Upper Aquifer Analytical Results - March 2002
American Chemical Service NPL Site
Griffith, Indiana

DRAFT
UNVALIDATED
RESULTS

Parameter (ug/L)	MW-39		MW-42		MW-43		MW-44		MW-45		MW-48		MW-49	
	Mar-02	BV	Mar-02	BV	Mar-02	BV	Mar-02	BV	Mar-02	BV	Mar-02	BV	Mar-02	BV
VOCs														
Benzene	**1** J/	*12*	**2** J/	*10*	5 U/		5 U/		**3** J/	*1,045*	**1,200** D/	*9,500*	**200**	*6,750*
Chloroethane	5 U/		5 U/		5 U/		5 U/		**4** J/	*215*	**33**	*1000*	5 U/	*715*
Tetrachloroethene	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Trichloroethene	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
1,1-Dichloroethane	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
1,1-Dichloroethene	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
1,2-Dichloroethane	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		**5**	*500*
cis-1,2-Dichloroethene	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
trans-1,2-Dichloroethene	**2** J/	*10*	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Vinyl Chloride	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Chlorobenzene	5 U/		5 U/		5 U/		5 U/		**8**	*80*	5 U/		5 U/	
Chloroform	5 U/		**1** JB/	*10*	5 U/		**1** JB/	*10*	**1** JB/	*80*	**1** JB/	*500*	5 U/	
Toluene	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
1,2-Dichlorobenzene	5 U/		5 U/		5 U/		5 U/		**1** J/	*20*	5 U/		5 U/	
Carbon disulfide	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
SVOCs (ug/L)														
Bis(2-chloroethyl)ether	NA		NA		NA		NA		NA		NA		NA	
Inorganics														
Arsenic	NA		NA		**16.4**	*81*	NA		NA		NA		NA	

Notes:
ug/L = micrograms per liter.
BV = Baseline Value (only provided for detected compounds)
NA = Not Analyzed
X/_ = Data qualifier added by laboratory
_/X = Data qualifier added by data validator
U = Indicates compound was analyzed for but not detected
B = Indicates analyte found in associated blank
D = Results based on diluted sample
Bold result indicates the compound was detected above the reporting limit
Bold and Italic results indicates the an exceedance of the baseline value of that compound.

Table 2
Summary of Lower Aquifer Analytical Results - March 2002
American Chemical Service NPL Site
Griffith, Indiana

DRAFT
UNVALIDATED
RESULTS

	MW-08		MW-09R		MW-10C		MW-23		MW-28		MW-29		MW-30		MW-31		MW-32	
Parameter (ug/L)	**Mar-02**	***BV***	**Mar-02**	***BV***	**Mar-02**	***BV***	**Mar-02**	***BV***	**Mar-02**	***BV***	**Mar-02**	***BV***	**Mar-02**	***BV***	**Mar-02**	***BV***	**Mar-02**	***BV***
VOCs																		
Benzene	5 U/		**11** J/	*310*	***480*** D/	*150*	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Chloroethane	5 U/		**330**	*2,900*	***460*** D/	*420*	5 U/		5 U/		9	*10*	5 U/		5 U/		5 U/	
Tetrachloroethene	5 U/		13 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Trichloroethene	5 U/		13 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
1,1-Dichloroethane	5 U/		13 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
1,1-Dichloroethene	5 U/		13 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
1,2-Dichloroethane	5 U/		13 U/		**15**	*150*	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
cis-1,2-Dichloroethene	5 U/		13 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
trans-1,2-Dichloroethene	5 U/		13 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Vinyl Chloride	5 U/		13 U/		**0.7** J/	*129*	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Carbon disulfide	5 U/		13 U/		**140**	*150*	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Methylene chloride	5 U/		13 U/		**5**	*128*	5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Toluene	5 U/		13 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
Chloroform	5 U/		13 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/		5 U/	
SVOCs																		
Bis(2-chloroethyl)ether	NA		**8** J/	*50*	NA		NA		NA		NA		NA		NA		NA	

Notes:
ug/L = micrograms per liter.
BV = Baseline Value (only provided for detected compounds)
NA = Not Analyzed
X/_ = Data qualifier added by laboratory
_/X = Data qualifier added by data validator
U = Indicates compound was analyzed for but not detected
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D = Results based on diluted sample
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Table 2
Summary of Lower Aquifer Analytical Results - March 2002
American Chemical Service NPL Site
Griffith, Indiana

DRAFT
UNVALIDATED
RESULTS

Parameter (ug/L)	MW-33 Mar-02		*BV*	MW-51 Mar-02		*BV*	MW-52 Mar-02		*BV*	MW-53 Mar-02		*BV*	MW-54R Mar-02		*BV*	MW-55 Mar-02		*BV*	MW56 Mar-02		*BV*
VOCs																					
Benzene	5	U/		5	U/		5	U/		**7**		*10*	**0.8**	J/	*10*	5	U/		**450**	D/	
Chloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		**8**		
Tetrachloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Trichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,2-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		**15**		
cis-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
trans-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Vinyl Chloride	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Carbon disulfide	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		**2**	J/	
Methylene chloride	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Toluene	**1**	JB/	*10*	**1**	JB/	*10*	5	U/		5	U/		**1**	JB/	*10*	5	U/		5	U/	
Chloroform	5	U/		5	U/		5	U/		5	U/		5	U/		**1**	JB/	*10*	5	U/	
SVOCs																					
Bis(2-chloroethyl)ether	NA			NA			NA			NA			NA			NA			NA		

Notes.
ug/L = micrograms per liter.
BV = Baseline Value (only provided for detected compounds)
NA = Not Analyzed
X/_ = Data qualifier added by laboratory
_/X = Data qualifier added by data validator
U = Indicates compound was analyzed for
J = Indicates estimated value but not detected
B = Indicates analyte found in associated blank
D = Results based on diluted sample
Bold result indicates the compound was detected above the reporting limit
Bold and Italic results indicates the an exceedance of the baseline value of that compound.

MWH
MONTGOMERY WATSON HARZA

May 9, 2002

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

√ KA. 5/16/02

Sean Grady
Project Manager
Indiana Department of Environmental Management
100 N. Senate Ave.
Indianapolis, Indiana 46204

Re: Progress Report – April 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Grady:

This monthly progress report is for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of April 2002. The number and letter in parenthesis at the end of each heading provide a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.)

The Thermal Oxidizer

The operational testing of the ISVE system began on April 1, 2002 with three ISVE wells in operation. During most of April, the system ran periodically during continued testing. Durr Engineering was on site on April 3 and 4 to continue troubleshooting and optimization of the thermal oxidizer and scrubber. A new pH probe was installed and its operation was verified during the week of April 1.

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Austgen Electric installed a new ultra-violet (UV) scanner on April 17. The UV scanner, designed to confirm the presence of the burner flame in the thermal oxidizer unit, was recommended by Durr Engineering to reduce the shutdown frequency. The thermal oxidizer is equipped with multiple safety devices designed to prevent overheating or damage to the unit. Some of the instruments and programming of the unit were adjusted during April to allow for continuous operation.

On the morning of April 25, MWH noticed an odor believed to be hydrochloric acid in the vicinity of the thermal oxidizer unit outside of the Groundwater Treatment Plant (GWTP). MWH detected elevated volatile organic compound (VOC) concentrations by conducting air monitoring with a flame-ionizing detector (FID). Regular air monitoring of the area around the unit had been conducted as late as the evening of the April 24 and no odor or VOCs had been detected at that time. The area was immediately cordoned off and all site personnel warned of the potential presence of elevated VOCs. After further investigation, MWH shut down the system for repair on April 26. MWH has attributed the leak to several incomplete welds and failed gaskets. The thermal oxidizer unit is being repaired and should be completed during the week of May 6.

The ISVE system had run continuously from April 19 to April 26 before it was shut down for gas leak repairs, as described above. MWH continues to conduct daily monitoring of the ISVE system when in operation in accordance with the Performance Standard Verification Plan (PSVP). Monitoring parameters include VOC concentration readings from wells, the thermal oxidizer operating temperature, and current weather conditions. MWH has prepared a punchlist of items for the thermal oxidizer still to be completed by Durr Engineering.

PSVP Sampling

MWH has begun eight weeks of off-gas compliance sampling of both the thermal oxidizer unit (ISVE system) and the catalytic oxidizer unit (GWTP) as described in the PSVP. The first sampling round was conducted on April 26 immediately prior to shutting off the system to repair the leakage. The samples were collected inside the treatment plant and not outside where the leak was observed. They were collected to assist, if needed, in the identification of the leak cause. The second round of sampling will be conducted after the thermal oxidizer system is repaired and running continuously.

ISVE Wells and Conveyance Piping

MWH is continuing to confirm proper operation of all the ISVE wells. As proper operation is confirmed from each well, it is closed and a new well is opened. In this manner, MWH will confirm proper operation of each ISVE well. Seven ISVE wells are in operation at this time.

Heritage Industrial was on site on April 1 to clear the conveyance piping to SVE-07 of excess water. Heritage also pressure tested the line to confirm its integrity. The line was witnessed by MWH to hold 50 psi of air for 5 minutes.

Heritage Industrial tested the tightness of the connections on the saddles and flanges of each of other the Off-Site Area ISVE wells from April 15 to 22. One further potential loose fitting was found at the saddle on well SVE-14 and it was replaced.

Recompaction of the Off-Site Area

Heritage Industrial and Patrick Engineering began performing compaction testing in the Off-Site Area on April 11. They are testing clay that was recompacted after the installation of the ISVE conveyance piping. They continued working periodically throughout the weeks of April 15 and 22. They will continue working in May until the work is completed.

Interim Cover of On-Site Area (5.c.)

MWH is currently evaluating the existing grades of the former Fire Pond area and comparing them to the original design for the interim cover. Design adjustments will be made to accommodate existing conditions before construction is scheduled to begin in the summer of 2002.

Final Cover of Off-Site Area (5.d.)

During the completion of the Off-Site Area interim cover in August and September 2001, KES also placed the final cover over all "Non-Flexible Membrane Liner (FML) Cover" areas of the Off-Site Area cover. The final cover will be placed on the FML Cover areas of the Off-Site Area after the operating ISVE wells are determined to be complete.

The temporary electrical line that delivered power to the Off-Site Area was removed during the week of April 8. Permanent power to the Off-Site Area has been in place since November 2001. Security Fence Company installed erosion matting and silt fencing in the Off-Site Area during the week of April 1 after MWH identified portions of the silt fencing requiring maintenance and/or repair.

During May or June 2002, MWH will perform maintenance of the Off-Site Area clay cover after winter snow and spring rain. MWH will also complete the Off-Site Area BWES cleanouts by covering them with manholes and covers. Also, MWH will extend the manhole cover around extraction well EW-13 to meet future final grades of the final cover

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate a participant whose attendance is necessary. During April 2002, weekly construction meetings were held on the 4th, 11th, 18th, and 25th. The minutes from each meeting are faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)

The Groundwater Treatment Plant (GWTP) continued to operate as designed during April 2002. MWH is bringing in water from all available extraction sources except for On-Site Area source EW-18 that has been turned off to allow MWH to focus more on dewatering the Off-Site Area. Two On-Site Barrier Wall Extraction System (BWES) wells (EW-10 and EW-17), nine of the Off-Site BWES wells (EW-11, EW-12, EW-15, EW-16, EW-19, EW-19A, EW-20, EW-20A, and EW-20B), and the Perimeter Groundwater Extraction System (PGCS) are currently bringing influent to the GWTP.

The GWTP is currently treating approximately 45 gallons per minute (gpm) influent water. Approximately 20 gpm are being pumped from On-Site Area wells and approximately 20-25 gpm are being pumped from Off-Site Area wells. The PGCS influent rate ranges up to three gpm.

MWH has recorded an increase in biological activity in the Activated Sludge Plant that has resulted in increased removal efficiency. Process monitoring conducted during April indicates approximately 99% removal efficiency of biological oxygen demand (BOD) and 90% removal efficiency of chemical oxygen demand (COD) in the Activated Sludge Plant.

The carbon in the granulated activated carbon (GAC) units ME-33/34 was changed on April 8. The manifold system of ME-33/34 was also replaced during the changeout process. MWH performed maintenance on the GWTP filter press on April 18. MWH is reviewing options to reduce the noise produced by the blowers located immediately south of the Groundwater Treatment Plant.

The April 2002 monthly effluent compliance sample for the GWTP was collected on April 22, 2002. MWH has not yet received the analytical results from this sample, but a summary will be included next month's progress report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)

The next scheduled groundwater monitoring event is September 2002. In March, MWH submitted responses to Agency comments on the revised Long-Term Groundwater Monitoring Plan. Upon final Agency approval, MWH will distributed copies of the approved Plan.

Residential Well Water Quality Monitoring (B.8.)

The next annual round of residential well sampling is scheduled for September 2002.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to or approved by the U.S. EPA and IDEM.

Reports Recently Submitted or Approved

- **Separation Barrier Wall Between On-Site and Off-Site Areas (4.a.)** – In a letter dated April 1, 2002, the U.S. EPA approved the Separation Barrier Wall Installation Construction Completion Report submitted by MWH on March 19, 2002. Additional copies of the approved Construction Completion Report were distributed on April 11, 2002. This item will be dropped from this list in future progress reports.

Reports Being Prepared

- **Drum Removal in On-Site Containment Area (1.c.)** – the Construction Completion Report is being prepared.
- **PCB Sediment Excavation from Wetland (1.d.)** - the Construction Completion Report is being prepared.
- **Groundwater Plume Treatment (1.e.)** – a report summarizing the South Area Oxygen Release Compound (ORC®) Pilot Study is being prepared.
- **Groundwater Treatment Plant Upgrade (3.a.)** – the as-built drawings are being prepared. They will be submitted to the Agencies, along with a brief summary of the construction upgrade process.
- **Barrier Wall Extraction System (BWES) Upgrades (3.b.)** – the Construction Completion Report is being prepared.
- **Interim Engineered Cover of Off-Site Area (5.a.)** – the Construction Completion Report is being prepared.
- **Treatment System Monitoring (B.1, 2, 3, 4)** – the Groundwater Treatment Plant Quarterly Report, Third Quarter 2001 is being prepared.
- **Groundwater, Air Quality, Wetland, and Monitoring (B.7)** – the March 2002 Groundwater Monitoring Quarterly Report is being prepared.

The next monthly report will be forwarded to U.S. EPA and IDEM by June 10, 2001. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH, Inc.

for

Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Updated Schedule of Remedial Activities

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Jim Vondracek - Ashland Chemical Company
Larry Campbell – Black & Veatch
Rob Adams – MWH
Peter Vagt – MWH
Travis Klingforth – MWH
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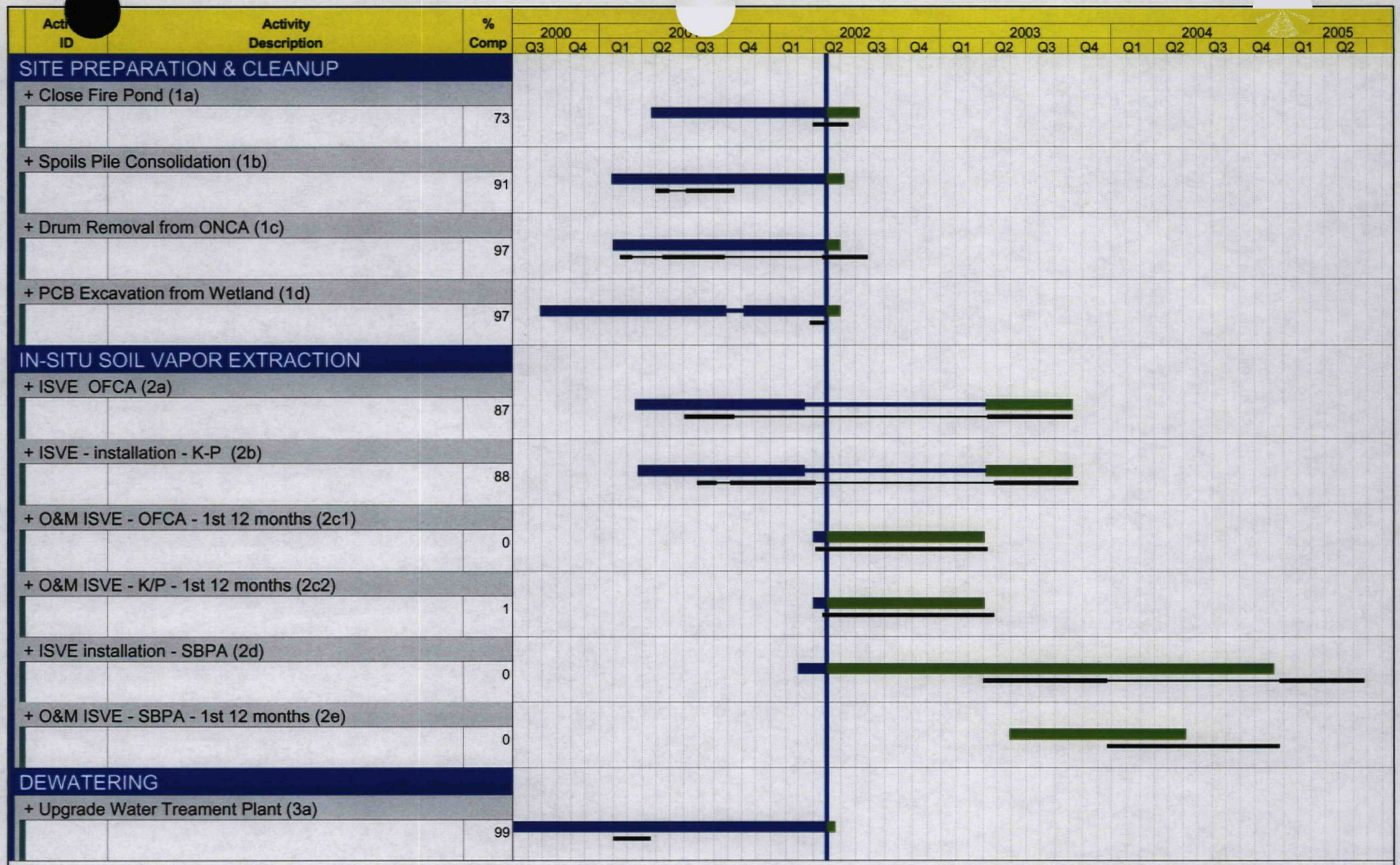

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Early Bar
Target 1
Progress Bar
Critical Activity

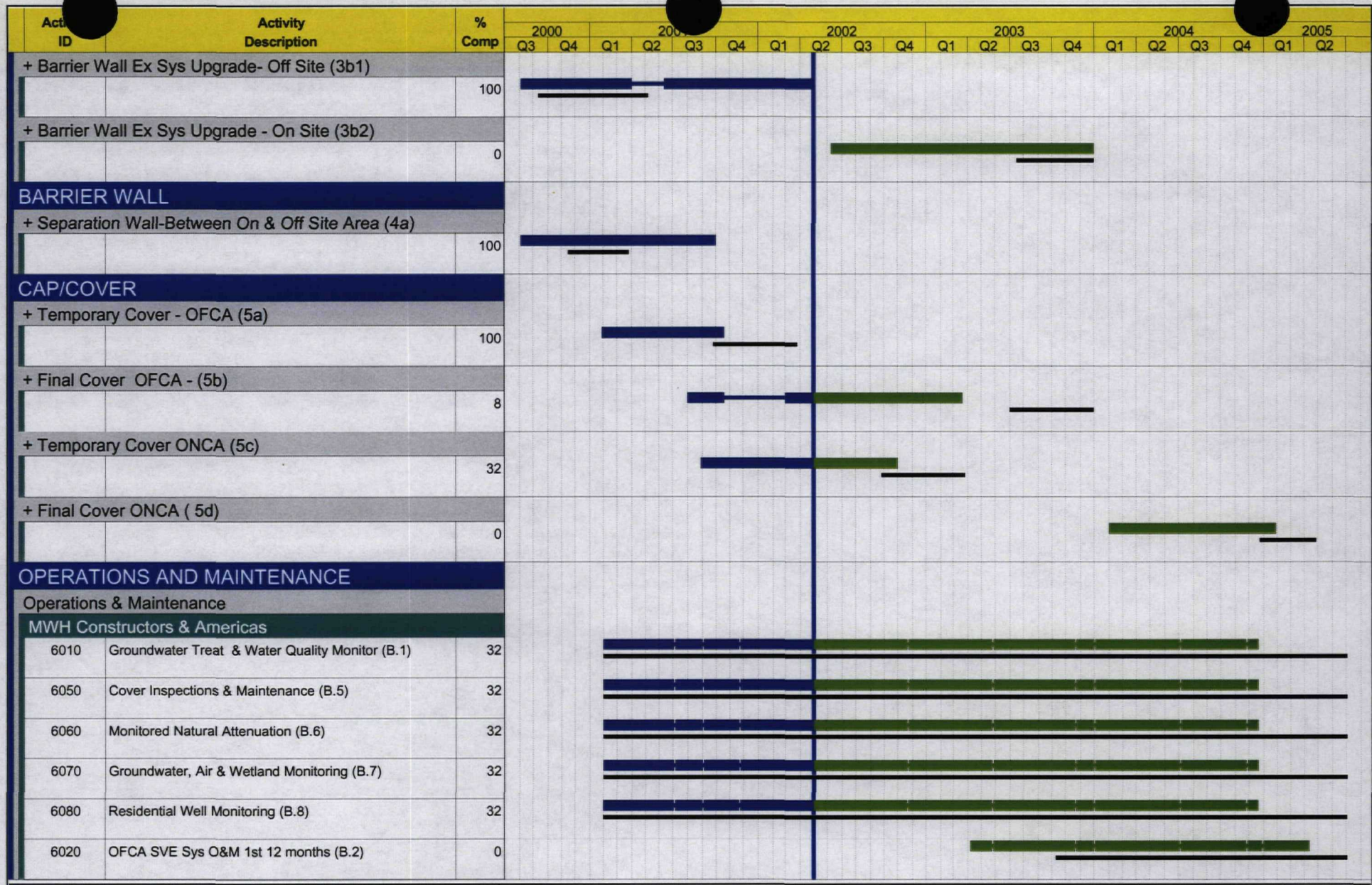
ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of April 2002 Report

MWH
MONTGOMERY WATSON HARZA



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Run Date 02MAY02 13:52

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

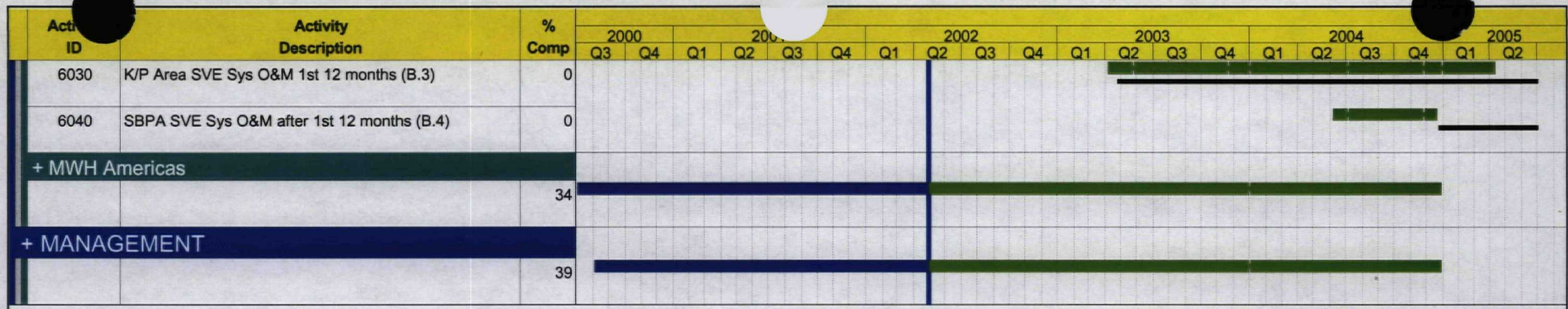
Sheet 2 of 3

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of April 2002 Report

MWH
MONTGOMERY WATSON HARZA



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Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

Sheet 3 of 3

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of April 2002 Report

MWH
MONTGOMERY WATSON HARZA

MWH
MONTGOMERY WATSON HARZA

June 7, 2002

J KA.
6/28/02

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Sean Grady
Project Manager
Indiana Department of Environmental Management
100 N. Senate Ave.
Indianapolis, Indiana 46204

Re: Progress Report – May 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Grady:

This monthly progress report is for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of May 2002. The number and letter in parenthesis at the end of each heading provide a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.)

The Thermal Oxidizer

During May, the ISVE system ran periodically during continued testing, with 12 to 15 wells in operation. The ISVE thermal oxidizer system was shut down on April 26 because vapor leakage was detected by MWH. The system was repaired and started back up on May 7. Once the system was running continuously and treating vapors, MWH performed air monitoring on May 10 with the flame ionization detector (FID) around the repaired thermal

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oxidizer unit, including the repaired weld and gasket locations. No leaks were detected. MWH continues to perform regular air monitoring with the FID unit as part of process monitoring.

Austgen Electric set up trending screens for the programmable logic center (PLC) during the week of May 13 for more effective diagnosis of system operation. They also installed timing devices in the PLC during the week of May 20 to minimize the impact of internal control panel interference signals which had been causing the ISVE to shut down.

On May 23, the float switches in the Blower Shed knockout tank failed and allowed water to accumulate in the pressure gauge at the Groundwater Treatment Plant (GWTP). The pressure gauge communicates with the variable frequency drive (VFD) motor that controls the speed of the thermal oxidizer's process blower. As a result of faulty pressure readings, the blower system's safety devices shut down the unit. MWH is still determining if the pressure gauge and/or VFD motor need to be replaced. MWH has replaced and reconfigured the float switches to avoid this problem in the future. Projected startup of the system is during the week of June 3.

PSVP Sampling

MWH has begun eight weekly rounds of off-gas compliance sampling of both the thermal oxidizer unit (ISVE system) and the catalytic oxidizer unit (GWTP) as described in the PSVP. These samples are used to determine the destruction efficiency of the units. The first sampling round was conducted on April 26. The samples were analyzed for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) by Air Toxics Laboratories in Folsom, California. The analytical data was validated by MWH and is included in Tables 1, 2, 3, and 4 that are attached. Due to system repair, the second round of sampling was postponed until May 22. The third round will be collected after the thermal oxidizer system is repaired and running continuously again.

ISVE Wells and Conveyance Piping

MWH is continuing to confirm proper operation of all the ISVE wells. As proper operation is confirmed from each well, it is closed and a new well is opened. In this manner, MWH will confirm proper operation of each ISVE well.

Recompaction of the Off-Site Area

Heritage Industrial continued the Off-Site Area ISVE System clay compaction work on May 22. They were testing clay that was recompacted after the installation of the ISVE conveyance piping. Patrick Engineering performed compaction testing on May 22 and May 23 and has submitted final compaction results to MWH. MWH is reviewing them and will work with Heritage Industrial to determine the next step.

Interim Cover of On-Site Area (5.c.)

MWH is currently evaluating the existing grades of the former Fire Pond area and comparing them to the original design for the interim cover. Design adjustments will be

made to accommodate existing conditions. Construction is scheduled to begin in the late summer of 2002.

Final Cover of Off-Site Area (5.d.)

MWH hosted a site walk for the installation of the Off-Site Area Final Cover for all bidders on May 29 at 10 am. Bids are due June 6 and work is scheduled to begin on August 1. MWH has identified tasks that need to be completed prior to installing the final cover. These tasks will be completed in June 2002.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate a participant whose attendance is necessary. During May 2002, weekly construction meetings were held on the 10th, 16th, 23rd, and 30th. The minutes from each meeting are faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)

The Groundwater Treatment Plant (GWTP) continued to operate as designed during May 2002. The GWTP is currently treating approximately 42 gallons per minute (gpm) influent water. All three On-Site Barrier Wall Extraction System (BWES) wells (EW-10, EW-17, and EW-18), nine of the Off-Site BWES wells (EW-11, EW-12, EW-15, EW-16, EW-19, EW-19A, EW-20, EW-20A, and EW-20B), and the Perimeter Groundwater Extraction System (PGCS) are currently bringing influent to the GWTP. This is the current maximum extraction capacity of the Barrier Wall Extraction System (BWES) extraction wells.

The Activated Sludge Plant has continued to remove contaminants with increased efficiency during the past few months due to continued biomass growth. A new pump, Pump P-112, was added to the GWTP during the week of May 20. This new pump will pump treated effluent water to the scrubber unit for use in the blowdown and cooling of the unit. Prior to the installation of P-112, MWH had been using piped water from the town of Griffith.

The Lamella Clarifier was drained, cleaned, and inspected on May 28 as part of regular maintenance of the GWTP. MWH removed the sludge buildup in the unit in order to increase ease of operation.

The April 2002 monthly effluent compliance sample for the GWTP was collected on April 22, 2002. The May 2002 monthly effluent compliance sample for the GWTP was collected on May 9, 2002. No exceedences were reported for either sample. Analytical results from both samples are included in the attached table, Table 2.2.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)
The next scheduled groundwater monitoring event is September 2002. In March 2002, MWH submitted responses to Agency comments on the revised Long-Term Groundwater Monitoring Plan. Upon final Agency approval, MWH will distributed copies of the approved Plan.

Residential Well Water Quality Monitoring (B.8.)
The next annual round of residential well sampling is scheduled for September 2002.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to or approved by the U.S. EPA and IDEM.

Reports Being Prepared

- **Drum Removal in On-Site Containment Area (1.c.)** – the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in August 2002.

- **PCB Sediment Excavation from Wetland (1.d.)** - the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies during July 2002.

- **Groundwater Plume Treatment (1.e.)** – a report summarizing the South Area Oxygen Release Compound (ORC®) Pilot Study is scheduled to be submitted to the Agencies during June 2002.

- **Groundwater Treatment Plant Upgrade (3.a.)** – the as-built drawings are being prepared. They are scheduled to be submitted to the Agencies during July 2002, along with a brief summary of the construction upgrade process.

- **Barrier Wall Extraction System (BWES) Upgrades (3.b.)** – the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies during July 2002.

- **Interim Engineered Cover of Off-Site Area (5.a.)** – the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies during June 2002.

- **Treatment System Monitoring (B.1, 2, 3, 4)** – the Groundwater Treatment Plant Quarterly Report, Third Quarter 2001 is being reviewed by the ACS PRP Group and is scheduled to be submitted to the Agencies during June 2002.

- **Groundwater, Air Quality, Wetland, and Monitoring (B.7)** – the March 2002 Groundwater Monitoring Quarterly Report is being prepared.

The next monthly report will be forwarded to U.S. EPA and IDEM by July 10, 2001. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH, Inc.

FOR Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Table 1 – Round 1 Thermal Oxidizer Results for Method TO-14 (VOCs)
Table 2 – Round 1 Thermal Oxidizer Results for Method TO-13 (SVOCs)
Table 3 – Round 1 Catalytic Oxidizer Results for Method TO-14 (VOCs)
Table 4 – Round 1 Catalytic Oxidizer Results for Method TO-13 (SVOCs)
Updated Schedule of Remedial Activities
Table 2.2 – Summary of Effluent Analytical Results – Second Quarter 2002

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Jim Vondracek - Ashland Chemical Company
Larry Campbell – Black & Veatch
Rob Adams – MWH
Peter Vagt – MWH
Travis Klingforth – MWH
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Table 1
Round 1 Thermal Oxidizer Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 1 - Sampled 4/26/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	2.3	NC	NC	NC
Vinyl Chloride	ppbv	13,000	2,800	0.95	99.97%	99.99%	99.98%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	12,000	1,900	ND	100.00%	100.00%	100.00%
1,1-Dichloroethene	ppbv	710 J/J	35 J/J	3.4	NC	NC	NC
Methylene Chloride	ppbv	160,000	3,700	0.88 /B	99.98%	100.00%	99.99%
1,1-Dichloroethane	ppbv	36,000	1,200	ND	100.00%	100.00%	100.00%
cis-1,2-Dichloroethene	ppbv	17,000	10,000	0.5 J/J	NC	NC	NC
Chlororform	ppbv	3,500	62	ND	100.00%	100.00%	100.00%
1,1,1-Trichloroethane	ppbv	89,000	390	0.13 J/J	NC	NC	NC
Carbon Tetrachloride	ppbv	ND	ND	0.13 J/J	NC	NC	NC
Benzene	ppbv	58,000	13,000	0.83	99.99%	100.00%	100.00%
1,2-Dichloroethane	ppbv	1,800	300	ND	100.00%	100.00%	100.00%
Trichloroethene	ppbv	32,000	90	1.2	98.67%	100.00%	99.33%
1,2-Dichloropropane	ppbv	ND	120	ND	100.00%	100.00%	100.00%
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	190,000	9,900	0.6 J/J	NC	NC	NC
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	21 J/J	ND	NC	NC	NC
Tetrachloroethene	ppbv	12,000	27 J/J	1.2	95.56%	NC	95.56%
Chlorobenzene	ppbv	ND	1,000	0.11 J/J	NC	NC	NC
Ethylbenzene	ppbv	13,000	1,800	ND	100.00%	100.00%	100.00%
m,p-Xylene	ppbv	50,000	9,400	ND	100.00%	100.00%	100.00%
o-Xylene	ppbv	14,000	3,100	ND	100.00%	100.00%	100.00%
Styrene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	28,000	690	3.3	99.52%	99.99%	99.75%
Carbon Disulfide	ppbv	ND	ND	0.3 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	ND	NC	NC	NC
2-Butanone (MEK)	ppbv	27,000	350	0.82 J/J	NC	NC	NC
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	6,900	450	ND	100.00%	100.00%	100.00%
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND /UJ	ND /UJ	ND	NC	NC	NC
Total	**ppbv**	**763,200**	**60,252**	**13.18**	**99.98%**	**100.00%**	**99.99%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 2
Round 1 Thermal Oxidizer Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 1 - Sampled 4/26/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND	ND	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND	ND	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	ND	10	ND	100.00%	100.00%	100.00%
1,2-Dichlorobenzene	µg	2.3	17	ND	100.00%	100.00%	100.00%
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	ND	ND	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	ND	ND	ND	NC	NC	NC
Naphthalene	µg	3.0	16	ND	100.00%	100.00%	100.00%
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	ND	4.6	ND	100.00%	100.00%	100.00%
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	ND	ND	ND	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	ND	ND	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND	ND	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	2.2 J/J	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	**5.3**	**47.6**	**ND**	**100.00%**	**100.00%**	**100.00%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 3
Round 1 Catalytic Oxidizer Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 1 - Sampled 4/26/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	ND	ND	240	NC	NC	NC
Vinyl Chloride	ppbv	2,900	7,300	350	87.93%	95.21%	91.57%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	2,200	6,600	170	92.27%	97.42%	94.85%
1,1-Dichloroethene	ppbv	24 J/J	410	24	NC	94.15%	94.15%
Methylene Chloride	ppbv	3,100	88,000	440	85.81%	99.50%	92.65%
1,1-Dichloroethane	ppbv	1,000	20,000	74	92.60%	99.63%	96.12%
cis-1,2-Dichloroethene	ppbv	10,000	9,700	880	90.93%	91.20%	91.06%
Chlororform	ppbv	ND	2,000	ND	100.00%	100.00%	100.00%
1,1,1-Trichloroethane	ppbv	270	53,000	13	95.19%	99.98%	97.58%
Carbon Tetrachloride	ppbv	ND	ND	ND	NC	NC	NC
Benzene	ppbv	14,000	33,000	1,500	89.29%	95.45%	92.37%
1,2-Dichloroethane	ppbv	310	1,000	32	89.68%	96.80%	93.24%
Trichloroethene	ppbv	65	18,000	7.1	89.08%	99.96%	94.52%
1,2-Dichloropropane	ppbv	110	270 J/J	7.4	93.27%	NC	93.27%
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	10,000	100,000	750	92.50%	99.25%	95.88%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	20 J/J	ND	2.0 J/J	NC	NC	NC
Tetrachloroethene	ppbv	23 J/J	6,800	5.3 J/J	NC	NC	NC
Chlorobenzene	ppbv	920	ND	110	NC	88.04%	#VALUE!
Ethylbenzene	ppbv	1,600	7,100	100	93.75%	98.59%	96.17%
m,p-Xylene	ppbv	7,700	26,000	480	93.77%	98.15%	95.96%
o-Xylene	ppbv	2,500	7,300	160	93.60%	97.81%	95.70%
Styrene	ppbv	ND	ND	19	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	610	16,000	88	85.57%	99.45%	92.51%
Carbon Disulfide	ppbv	ND	ND	ND	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	54	NC	NC	NC
2-Butanone (MEK)	ppbv	340	15,000	27	92.06%	99.82%	95.94%
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	410	3,800	21 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	**ppbv**	**58,035**	**421,010**	**5,526**	**90.48%**	**98.69%**	**94.58%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Qualifiers:
J - Result is estimated

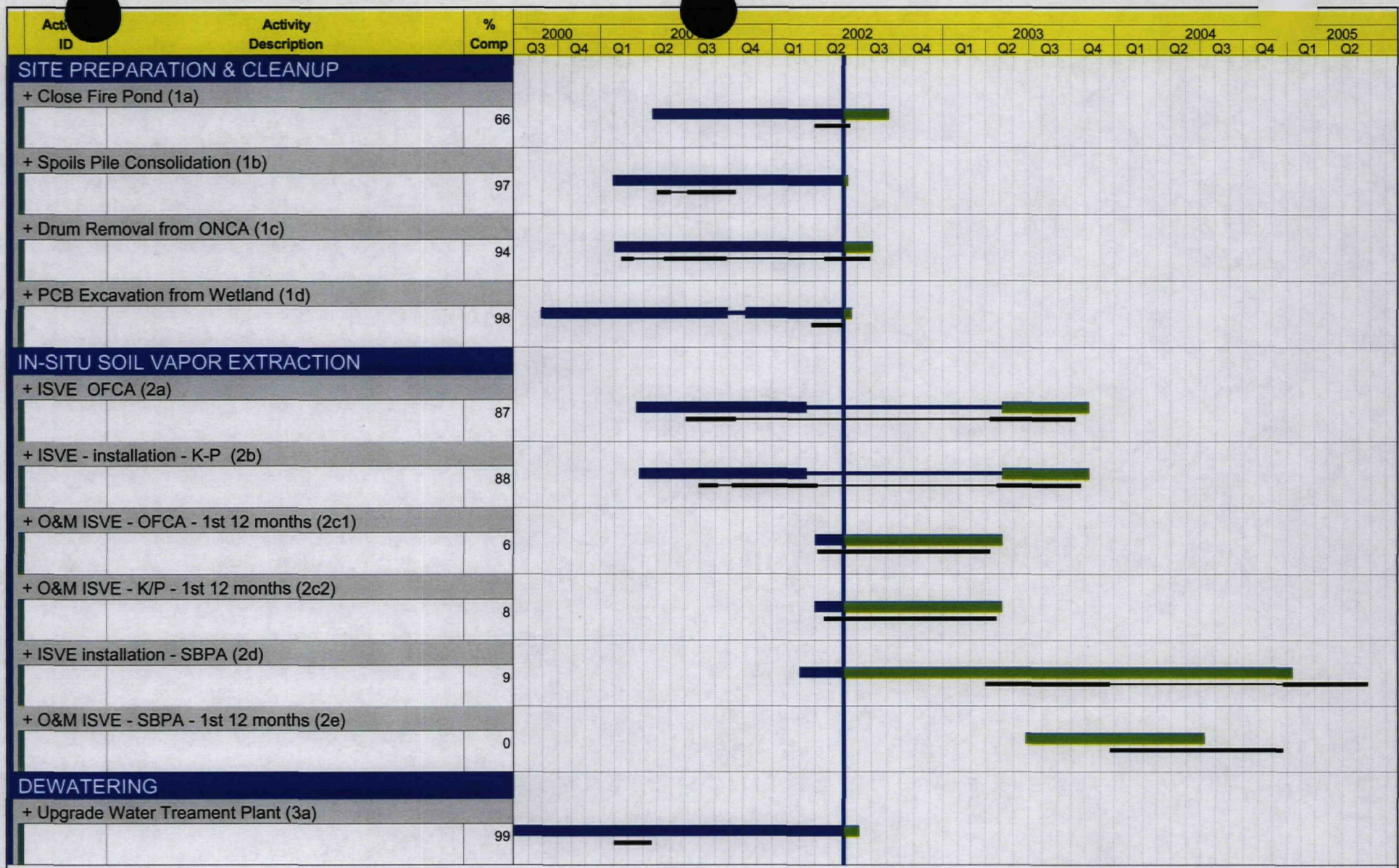
Table 4
Round 1 Catalytic Oxidizer Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 1 - Sampled 4/26/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND	ND	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	0.88 J/J	ND	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	12	ND	1.0	91.67%	91.67%	91.67%
1,2-Dichlorobenzene	µg	21	3.9	1.6	58.97%	92.38%	75.68%
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	ND	ND	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	0.75 J/J	ND	ND	NC	NC	NC
Naphthalene	µg	18	6.2	0.97 J/J	NC	NC	NC
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	5.4	ND	ND	100.00%	100.00%	100.00%
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	ND	ND	ND	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	ND	ND	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND	ND	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	2 J/J	ND	1.2 J/J	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	**56.4**	**10.1**	**2.6**	**52.77%**	**83.18%**	**67.97%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated

Destruction efficiency is not calculated where influent and/or effluent values are estimated.



Data Date 03JUN02
Run Date 05JUN02 11:23

Early Bar
Target 1
Progress Bar
Critical Activity

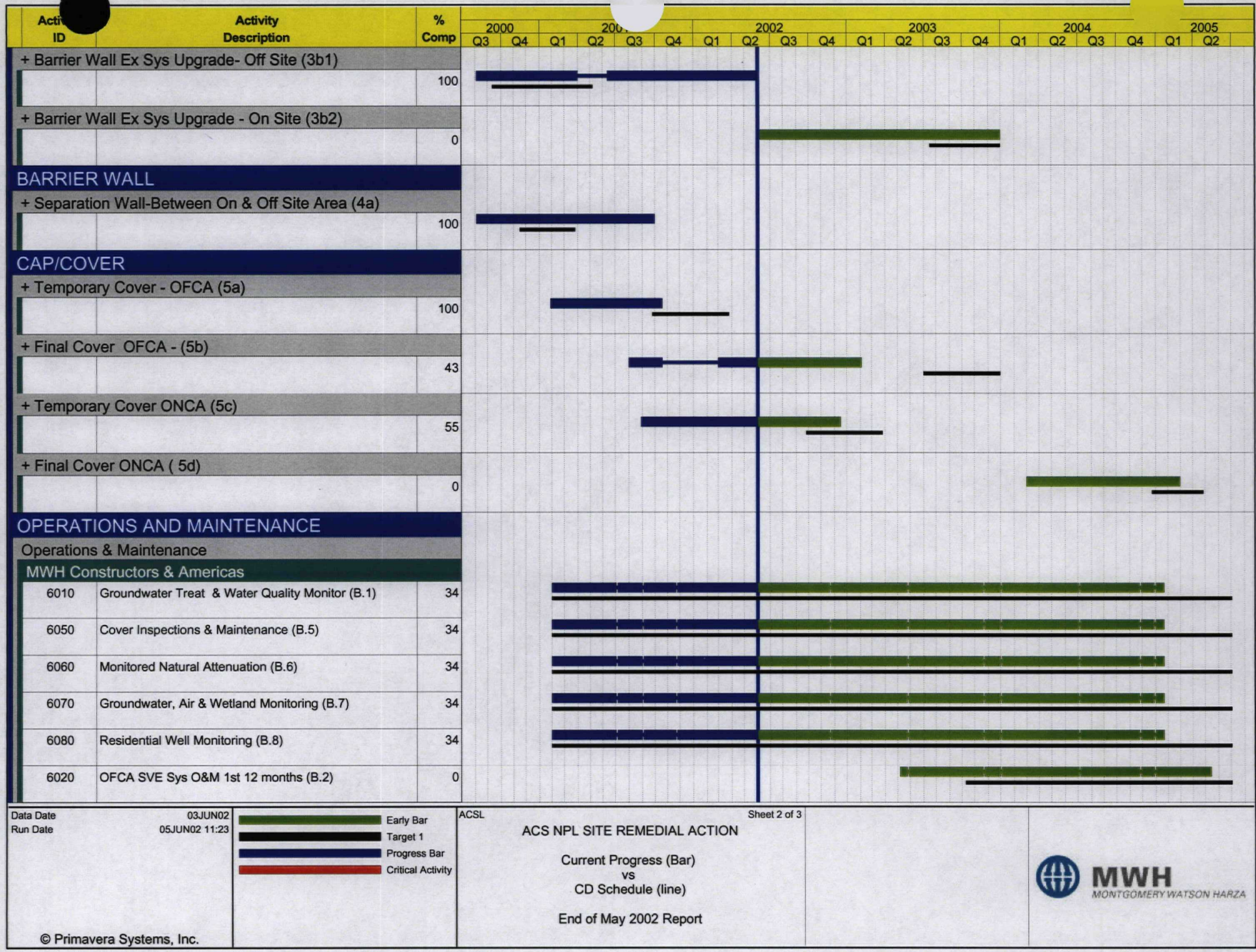
ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of May 2002 Report

MWH
MONTGOMERY WATSON HARZA



Data Date 03JUN02
Run Date 05JUN02 11:23

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of May 2002 Report

MWH
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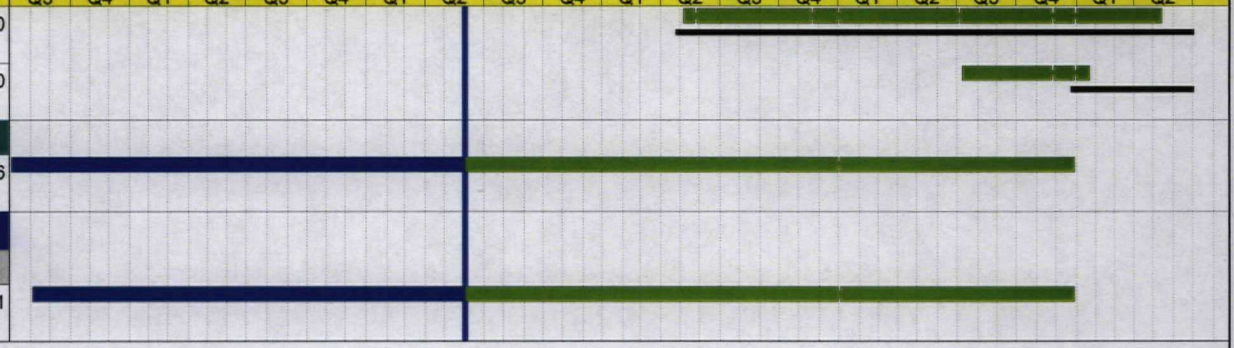
Acti ID	Activity Description	% Comp
6030	K/P Area SVE Sys O&M 1st 12 months (B.3)	0
6040	SBPA SVE Sys O&M after 1st 12 months (B.4)	0
+ MWH Americas		
		36
MANAGEMENT		
+ MWA Management		
		41



Data Date 03JUN02
Run Date 05JUN02 11:23

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of May 2002 Report

MWH
MONTGOMERY WATSON HARZA

Table 2.2
Summary of Effluent Analytical Results - Second Quarter 2002
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 59 4/22/02	Month 60 5/9/02	Effluent Limits	Lab Reporting
pH	7.96	7.83	6-9	none
TSS	ND	ND	30	10
BOD	ND	ND	30	2
Arsenic	ND	ND	50	3.4
Beryllium	ND	0.21 B/	NE	0.2
Cadmium	ND	ND	4.1	0.3
Manganese	14.4	8.9 B/	NE	10
Mercury	ND	ND	0.02 (w/DL = 0.64)	0.64
Selenium	ND	ND	8.2	4.3
Thallium	ND	ND	NE	5.7
Zinc	7.1 B/UB	ND	411	1.2
Benzene	ND	ND	5	0.5
Acetone	1 JB/	ND	6,800	3
2-Butanone	ND	ND	210	3
Chloromethane	0.1 J/3 UBJ	ND	NE	0.5
1,4-Dichlorobenzene	ND	ND	NE	0.5
1,1-Dichloroethane	ND	ND	NE	0.5
cis-1,2-Dichloroethene	ND	ND	70	0.5
Ethylbenzene	ND	ND	34	0.5
Methylene chloride	0.1 J/	ND	5	0.6
Tetrachloroethene	0.05 JB/0.5 UB	ND	5	0.5
Trichloroethene	ND	ND	5	0.5
Vinyl chloride	ND	ND	2	0.5
4-Methyl-2-pentanone	ND	ND	15	3
bis (2-Chloroethyl) ether	ND	ND	9.6	9.6
bis(2-Ethylhexyl) - phthalate	0.91 JB/6 UB	ND	6	6
4 - Methylphenol	ND	ND	34	10
Isophorone	ND	ND	50	10
Pentachlorophenol	ND	ND	1	1
PCB/Aroclor-1016	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	ND	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:

April data has been validated in accordance with the Project QAPP (November 2001) and the U.S. EPA National Functional Guidelines for Organic Data Review

May data has not yet been validated

Shaded cells indicate discharge exceedances

pH data is expressed in S.U.

TSS and BOD5 data is expressed in mg/L

Metals, VOC, SVOC and PCB data is expressed in ug/L

ND = Not detected

NE = No effluent limit established.

NA = Sample not analyzed for this compound

* = Approved SW-846 method is incapable of achieving effluent limit.

Suffix Definitions:

_/ = Data qualifier added by laboratory

/_ = Data qualifier added by data validator

B = Compound is also detected in the blank

E = Compound exceeds the upper level of calibration range of instrument

J = Result is detected below the reporting limit and is an estimated concentration

Q = Sample was analyzed out of the recommended holding time

R = Quality control indicates the data is not usable

JB = Analyte is detected in the compliance sample below the reporting limit and is an estimated concentration and the compound is also detected in the method blank resulting in a potential high bias

U = Analyte is not detected at or above the indicated concentration

UB = Analyte is not detected at or above the indicated concentration due to blank contamination

UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value

D = Result obtained after diluting sample

MWH
MONTGOMERY WATSON HARZA

July 9, 2002

✓ KA. 7/02

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Sean Grady
Project Manager
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: Progress Report – June 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Grady:

This monthly progress report is for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of June 2002. The number and letter in parentheses at the end of each heading provides a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.)

The Off-Site Area ISVE system was operational throughout much of the month of June.

The float switches in the ISVE system knockout tank malfunctioned, shutting down the system on May 23, 2002. The switches were replaced and the system was restarted on June 6, 2002. MWH shut down the system on June 9, 2002 in response to abnormal flow readings indicating water in the vapor conveyance piping. Operation of the water knockout tank in the blower shed was verified and the system was brought back on line on June 10.

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60555

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On June 12, the system was shut off to perform scheduled maintenance and testing. At this time, the integrity of the 8-inch diameter conveyance line from the blower shed to the GWTP was reconfirmed via pressure testing. During the shutdown period, a vibration isolator was installed on the blower effluent pipe in the blower shed. The system was then restarted.

The ISVE system shut down for several hours on June 26 due to a power outage at the GWTP caused by thunderstorms in the area. The system was brought back on line on June 27.

ISVE Wells and Conveyance Piping

MWH is continuing to confirm proper operation of all the ISVE wells. As proper operation is confirmed from each set of wells, those wells are closed and a new set is opened. In this manner, MWH will confirm proper operation of each ISVE well. To date, operation of 32 of the 42 ISVE wells has been confirmed. System monitoring results are attached (Table 6). Confirmation of the remaining ten wells will continue in July 2002. Proper operation was confirmed by three days of consistent flow and pressure readings from the well. Please note that in many cases more than three days was needed due to system adjustments, shutdowns, and maintenance.

Thermal Oxidizer/Scrubber System

The previous monthly status report stated the float switches in the Blower Shed knockout tank failed and allowed water to accumulate in the pressure gauge at the Groundwater Treatment Plant (GWTP). The pressure gauge communicates with the variable frequency drive (VFD) motor that controls the speed of the thermal oxidizer's process blower. As a result of faulty pressure readings, the blower system's safety devices shut down the unit. Prior to restarting the ISVE system on June 6, 2002, MWH determined the pressure gauge was functioning correctly after the water was removed but the program for the VFD needed to be restored.

On June 18 and 19, the thermal oxidizer/scrubber system shut down due to a high water level in the scrubber sump. The problem was traced to a programming logic issue between the thermal oxidizer/scrubber PLC and the GWTP PLC. MWH refined the system on June 19 and brought the system back on line.

PSVP Sampling

During June 2002, MWH continued the eight weekly rounds of off-gas compliance sampling of both the thermal oxidizer unit (ISVE system) and the catalytic oxidizer unit (GWTP) as described in the PSVP. These samples are used to determine the destruction efficiency of the units and compliance with discharge limits. Due to system downtime, sampling during this month was only conducted on June 28, 2002. The samples were sent to be analyzed for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) by Air Toxics Laboratories in Folsom, California. Analytical data from the samples collected on May 22, 2002 have been validated by MWH and are

included in Tables 1, 2, 3, and 4 attached. The data indicate that the system is operating within its permitted requirements of discharging less than three pounds of VOCs per day.

Recompaction of the Off-Site Area Cover Areas

MWH continued to work with Heritage Industrial Services (HIS) to finalize a course of action to achieve hydraulic conductivity standards for Off-Site Area ISVE conveyance pipe installation. HIS will mobilize to the site in July 2002 to perform additional work. HIS has proposed to remove the top six inches of clay above the conveyance pipes and add water to the removed clay. The clay would then be replaced and recompacted. MWH will require compaction testing of the reinstalled clay and pressure testing of the conveyance pipes to ensure the cover is complete and the pipes have not been damaged.

Interim Cover of On-Site Area (5.c.)

MWH is currently developing the request for bid (RFB) for the earthwork contractor for the construction of the On-Site Area Interim Cover. As part of the RFB, MWH is finalizing the design grades for the Cover. Construction is scheduled to begin in the late summer/early fall of 2002.

Final Cover of Off-Site Area (5.d.)

MWH received three bids for the installation of the Off-Site Area Final Cover. Bids were received from Environmental Contractors of Illinois (ECI), Heritage Industrial Services (HIS), and Koester Environmental Services (KES). MWH reviewed the bids and has recommended ECI. MWH expects a contract with ECI to be finalized by July 5, 2002. Work is expected to begin in August 2002.

In preparation for the construction of the final cover, MWH developed a list of maintenance items to be completed in the Off-Site Area. This list included the installation of protective structures around piezometers and extraction trench cleanouts, raising manholes at EW-12 and EW-13A, implementation of erosion controls, and repair of erosion damage to the clay layer. Midwest Environmental Inc. (MEI) completed much of the work from June 21 to June 28, 2002. The remaining work will be completed in July 2002.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate a participant whose attendance is necessary. During June 2002, weekly construction meetings were held on the 6th, 13th, 20th, and 27th. The minutes from each meeting are faxed to participants and the Agencies by the Tuesday following each meeting.

By consensus among participants in the meetings, it was decided to reduce the meetings to a frequency of every other week during July 2002. Meetings are planned for July 11, 2002 and July 25, 2002.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)

The Groundwater Treatment Plant (GWTP) continued to operate as designed during June 2002. The GWTP is currently treating approximately 40 to 50 gallons per minute (gpm) of influent water. All three On-Site Barrier Wall Extraction System (BWES) wells (EW-10, EW-17, and EW-18), nine of the Off-Site BWES wells (EW-11, EW-12, EW-15, EW-16, EW-19, EW-19A, EW-20, EW-20A, and EW-20B), and the Perimeter Groundwater Extraction System (PGCS) are currently bringing influent to the GWTP. EW-12 was temporarily taken off line because MEI is raising the manhole around the well to a grade above the final cover in the Off-Site Area.

The activated sludge treatment component has continued to remove contaminants with increased efficiency due to continued biomass growth. Prompted by operational difficulties encountered during the past winter, MWH conducted a pilot test to determine if heat from the water in the scrubber units can be recovered and used to transfer heat to the biotank during the winter. MWH is evaluating the results of the test to determine whether the water-to-water heat exchanger is a viable option.

During June 2002, MWH continued maintenance on the thickening rake in the Lamella clarifier.

The Performance Standard Verification Plan (PSVP) for the GWTP established a quarterly sampling schedule for the GWTP effluent. However, during the past several years as the water treatment system has been modified and optimized, MWH has conducted sampling on a monthly basis to maintain a closer documentation of system performance. The water treatment components are now functioning efficiently and showing stability. Therefore, on June 5, 2002, MWH distributed a memorandum recommending that the sampling frequency be reduced to the quarterly timeframe included in the PSVP. MWH will continue to collect monthly samples for volatile organic compounds (VOCs) and pH.

MWH collected the annual sediment sample from the wetland discharge point of the GWTP on June 5 and submitted it for analysis. Analytical results are attached (Table 5).

The June 2002 monthly effluent compliance sample for the GWTP was collected on June 20, 2002. MWH has not yet received the analytical results from this sample. A summary will be included in next month's progress report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)
The next scheduled groundwater monitoring event is September 2002. In March 2002, MWH submitted responses to Agency comments on the revised Long-Term Groundwater Monitoring Plan. MWH has received notification of Agency approval and will distribute copies of the approved Plan.

Residential Well Water Quality Monitoring (B.8.)
The next annual round of residential well sampling is scheduled for September 2002.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to or approved by the U.S. EPA and IDEM.

Reports Being Prepared

- **Drum Removal in On-Site Containment Area (1.c.)** – the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in August 2002.

- **PCB Sediment Excavation from Wetland (1.d.)** - the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies during July 2002.

- **Groundwater Plume Treatment (1.e.)** – a report summarizing the South Area Oxygen Release Compound (ORC®) Pilot Study is scheduled to be submitted to the Agencies. Per a conversation with the Agencies, submittal has been postponed.

- **Groundwater Treatment Plant Upgrade (3.a.)** – the as-built drawings are being prepared. They are scheduled to be submitted to the Agencies during July 2002, along with a brief summary of the construction upgrade process.

- **Barrier Wall Extraction System (BWES) Upgrades (3.b.)** – the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies during July 2002.

- **Groundwater, Air Quality, Wetland, and Monitoring (B.7)** – the March 2002 Groundwater Monitoring Quarterly Report is being prepared.

Reports Submitted

- **Interim Engineered Cover of Off-Site Area (5.a.)** – the Construction Completion Report was submitted to the Agencies on June 19, 2002. This item will be dropped from future progress reports.

- **Treatment System Monitoring (B.1, 2, 3, 4)** – the Groundwater Treatment Plant Quarterly Report, Third Quarter 2001 was submitted to the Agencies June 11, 2002. This item will be dropped from future progress reports.

The next monthly report will be forwarded to U.S. EPA and IDEM by August 10, 2002. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH

Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Table 1 – Thermal Oxidizer Results for Method TO-14 (VOCs)
Table 2 – Thermal Oxidizer Results for Method TO-13 (SVOCs)
Table 3 – Catalytic Oxidizer Results for Method TO-14 (VOCs)
Table 4 – Catalytic Oxidizer Results for Method TO-13 (SVOCs)
Table 5 – Groundwater Treatment System Outfall Sediment Sample, Preliminary Analytical Results
Table 6 –ISVE System Operation Data, OFCA and KP Area Systems
Updated Schedule of Remedial Activities

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Jim Vondracek - Ashland Chemical Company
Larry Campbell – Black & Veatch
Rob Adams – MWH
Peter Vagt – MWH
Travis Klingforth – MWH
FILE

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Table 1
Thermal Oxidizer Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 2 - Sampled 5/22/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	0.92	NC	NC	NC
Vinyl Chloride	ppbv	30,000	35,000	2.2	99.99%	99.99%	99.99%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	21,000	24,000	1.8	99.99%	99.99%	99.99%
1,1-Dichloroethene	ppbv	3,300 J/J	4,300 J/J	ND	NC	NC	NC
Methylene Chloride	ppbv	690,000	810,000	2.2	100.00%	100.00%	100.00%
1,1-Dichloroethane	ppbv	160,000	190,000	1.1	100.00%	100.00%	100.00%
cis-1,2-Dichloroethene	ppbv	160,000	190,000	6.4	100.00%	100.00%	100.00%
Chlororform	ppbv	19,000	23,000	0.31 J/J	NC	NC	NC
1,1,1-Trichloroethane	ppbv	480,000	580,000	0.31 J/J	NC	NC	NC
Carbon Tetrachloride	ppbv	ND	ND	0.11 J/J	NC	NC	NC
Benzene	ppbv	430,000	500,000	0.23 J/J	NC	NC	NC
1,2-Dichloroethane	ppbv	9,600	12,000	0.17 J/J	NC	NC	NC
Trichloroethene	ppbv	160,000	200,000	ND	100.00%	100.00%	100.00%
1,2-Dichloropropane	ppbv	3,100 J/J	4,000 J/J	ND	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	980,000	1,100,000	0.20 J/J	NC	NC	NC
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	73,000	83,000	ND	100.00%	100.00%	100.00%
Chlorobenzene	ppbv	ND	ND	ND	NC	NC	NC
Ethylbenzene	ppbv	57,000	64,000	ND	100.00%	100.00%	100.00%
m,p-Xylene	ppbv	200,000	230,000	ND	100.00%	100.00%	100.00%
o-Xylene	ppbv	53,000	61,000	ND	100.00%	100.00%	100.00%
Styrene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	95,000	110,000	8.4	99.99%	99.99%	99.99%
Carbon Disulfide	ppbv	ND	ND	0.73 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	ND	NC	NC	NC
2-Butanone (MEK)	ppbv	130,000	150,000	18	99.99%	99.99%	99.99%
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	39,000	46,000	ND	100.00%	100.00%	100.00%
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND /UJ	ND /UJ	ND /UJ	NC	NC	NC
Total	ppbv	3,786,600	4,408,000	41.02	100.00%	100.00%	100.00%

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 2
Thermal Oxidizer Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 2 - Sampled 5/22/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND /UJ	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND	ND /UJ	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND	ND /UJ	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	1.4	ND /UJ	ND	100.00%	100.00%	100.00%
1,2-Dichlorobenzene	µg	14	27 /J	ND	100.00%	100.00%	100.00%
2-Methylphenol (o-Cresol)	µg	ND	ND /UJ	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND /UJ	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND /UJ	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND /UJ	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND /UJ	ND	NC	NC	NC
Isophorone	µg	4.1	7.4 /J	ND	100.00%	100.00%	100.00%
2-Nitrophenol	µg	ND	ND /UJ	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND /UJ	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND /UJ	ND	NC	NC	NC
2,4-Dichlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	0.45 J/J	0.96 J/J	ND	NC	NC	NC
Naphthalene	µg	10	22 /J	ND	100.00%	100.00%	100.00%
4-Chloroaniline	µg	ND	ND /UJ	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND /UJ	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND /UJ	ND	NC	NC	NC
2-Methylnaphthalene	µg	0.99 J/J	2.1 /J	ND	100.00%	100.00%	100.00%
Hexachlorocyclopentadiene	µg	ND	ND /UJ	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND /UJ	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND /UJ	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND /UJ	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND /UJ	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND /UJ	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND /UJ	ND	NC	NC	NC
Acenaphthene	µg	ND	ND /UJ	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND /UJ	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND /UJ	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND /UJ	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND /UJ	ND	NC	NC	NC
Diethylphthalate	µg	0.82 J/JB	0.38 J/JB	ND	NC	NC	NC
Fluorene	µg	ND	ND /UJ	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND /UJ	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND /UJ	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND /UJ	ND	NC	NC	NC
4-Nitrosodiphenylamine	µg	ND	ND /UJ	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND /UJ	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND /UJ	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
Phenanthrene	µg	ND	ND /UJ	ND	NC	NC	NC
Anthracene	µg	ND	ND /UJ	ND	NC	NC	NC
di-n-Butylphthalate	µg	0.77 J/J	0.61 J/J	ND	NC	NC	NC
Fluoranthene	µg	ND	ND /UJ	ND	NC	NC	NC
Pyrene	µg	ND	ND /UJ	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND	ND /UJ	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND /UJ	ND	NC	NC	NC
Chrysene	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND /UJ	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	ND /UJ	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND /UJ	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND /UJ	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND /UJ	ND	NC	NC	NC
Total	µg	29.5	0	ND	100.00%	100.00%	100.00%

Notes:

_/ - Laboratory data qualifier

/_ - Data validation qualifier

µg - Microgram

NC - Not calculated

ND - Non-detect

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 3
Catalytic Oxidizer Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 2 - Sampled 5/22/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	ND	ND	17	NC	NC	NC
Vinyl Chloride	ppbv	540	410	57	86.10%	89.44%	87.77%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	280	210	18	91.43%	93.57%	92.50%
1,1-Dichloroethene	ppbv	4.9 J/J	3.7 J/J	6.1	NC	NC	NC
Methylene Chloride	ppbv	420	360	49	86.39%	88.33%	87.36%
1,1-Dichloroethane	ppbv	210	170	14	91.76%	93.33%	92.55%
cis-1,2-Dichloroethene	ppbv	2,300	1,900	180	90.53%	92.17%	91.35%
Chlororform	ppbv	3.8 J/J	3.1 J/J	0.54 J/J	NC	NC	NC
1,1,1-Trichloroethane	ppbv	54	40	3.1	92.25%	94.26%	93.25%
Carbon Tetrachloride	ppbv	ND	1.9 J/J	ND	NC	NC	NC
Benzene	ppbv	2,200	1,800	240	86.67%	89.09%	87.88%
1,2-Dichloroethane	ppbv	53	46	5.4	88.26%	89.81%	89.04%
Trichloroethene	ppbv	6.3 J/J	5.4 J/J	0.8	NC	NC	NC
1,2-Dichloropropane	ppbv	22	20	1.4	93.00%	93.64%	93.32%
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	1,700	1,400	120	91.43%	92.94%	92.18%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	7.2 J/J	6.0 J/J	0.61 J/J	NC	NC	NC
Tetrachloroethene	ppbv	ND	ND	0.30 J/J	NC	NC	NC
Chlorobenzene	ppbv	200	170	23	86.47%	88.50%	87.49%
Ethylbenzene	ppbv	410	350	20	94.29%	95.12%	94.70%
m,p-Xylene	ppbv	1,700	1,400	74	94.71%	95.65%	95.18%
o-Xylene	ppbv	580	520	26	95.00%	95.52%	95.26%
Styrene	ppbv	ND	ND	3.8	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	3.5 J/J	2.7 J/J	0.33 J/J	NC	NC	NC
Acetone	ppbv	1,100	1,100	92	91.64%	91.64%	91.64%
Carbon Disulfide	ppbv	ND	ND	0.31 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	8.5	NC	NC	NC
2-Butanone (MEK)	ppbv	630	630	34	94.60%	94.60%	94.60%
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	440	440	15	96.59%	96.59%	96.59%
2-Hexanone	ppbv	13 J/J	12 J/J	0.46 J/J	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND /UJ	ND /UJ	ND /UJ	NC	NC	NC
Total	ppbv	12,839	10,966	1,008	92.15%	90.81%	91.48%

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 4
Catalytic Oxidizer Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 2 - Sampled 5/22/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	0.87 J/J	0.70 J/J	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	0.50 J/J	ND	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	6.3	4.4	ND	100.00%	100.00%	100.00%
1,2-Dichlorobenzene	µg	13	9.2	ND	100.00%	100.00%	100.00%
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	ND	ND	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	1.6	1.2	ND	100.00%	100.00%	100.00%
Naphthalene	µg	29	23	ND	100.00%	100.00%	100.00%
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	9.4	7.2	ND	100.00%	100.00%	100.00%
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	ND	ND	ND	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	0.85 J/J	0.81 J/J	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND	ND	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	ND	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	59.3	45	ND	100.00%	100.00%	100.00%

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

LRH/IJ
J:\209\0603\0301 GWTP\Cat-Ox Therm-Ox Sampling\R2 Results.xls\TO-13-CO

Table 5
Groundwater Treatment System Outfall Sediment Sample
Preliminary Analytical Results
American Chemical Service, Griffith, Indiana

Compounds	Units	Sediment Samples	
SW-846 and Method 8082		GWTP-003	GWTP-004 (Dup.)
Aroclor-1016	µg/kg	ND	ND
Aroclor-1221	µg/kg	ND	ND
Aroclor-1232	µg/kg	ND	ND
Aroclor-1242	µg/kg	ND	ND
Aroclor-1248	µg/kg	ND	ND
Aroclor-1254	µg/kg	ND	ND
Aroclor-1260	µg/kg	41 J	ND

Notes:

_/ - Laboratory data qualifier

/_ - Data validation qualifier

µg/kg - Micrograms per kilogram

NC - Not calculated

ND - Non-detect

Dup. - Duplicate sample

Sample results not yet validated in accordance with Quality Assurance Plan.

Qualifiers:

J - Result is estimated

Table 6.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-01	4/22/02	60	12	>50,000	
	4/23/02	61	24	NA	
	4/24/02	44	22	>50,000	
	5/15/02	44	22	>50,000	
	5/21/02	236	50	188	
	5/22/02	107	54	240	
	5/23/02	76	57	422	Testing Completed
SVE-02	5/15/02	44	24	>50,000	
	5/21/02	193	54	292	
	5/22/02	76	60	425	
	5/23/02	76	64	460	Testing Completed
SVE-03	6/7/02	0	68	193	
	6/10/02	63	39	Water	
	6/13/02	0	38	335	
	6/14/02	0	40	414	
	6/17/02	0	40	540	
	6/20/02	0	60	Water	
	6/21/02	0	64	Water	
	6/24/02	0	62	408	
	6/25/02	0	56	383	
	6/26/02	0	47	647	
	6/27/02	0	46	528	
SVE-04	6/7/02	Water	72	Water	
	6/10/02	0	49	215	Water
	6/13/02	0	47	0	
	6/14/02	0	48	0	
	6/17/02	0	49	0	
	6/20/02	0	71	Water	
	6/21/02	Water	72	Water	
	6/24/02	Water	72	Water	
	6/25/02	Water	64	Water	
	6/26/02	0	58	161	
	6/27/02	0	58	Water	
SVE-05	6/10/02	78	35	675	
	6/13/02	107	35	1210	
	6/14/02	88	38	920	Testing Completed
	6/17/02	108	37	1005	

Table 6.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-06	6/7/02	203	64	514	
	6/10/02	63	25	735	
	6/13/02	68	20	1138	
	6/14/02	76	22	1086	Testing Completed
	6/17/02	63	22	1030	
SVE-07	4/23/02	61	28	>50,000	
	4/24/02	44	26	>50,000	
	5/15/02	0	24	>50,000	
	5/21/02	Water	58	273	
	5/22/02	Water	64	1550	
	5/23/02	Water	70	Water	
	6/20/02	0	70	Water	
	6/21/02	Water	72	Water	
	6/24/02	Water	54	Water	
	6/25/02	Water	56	Water	
	6/26/02	Water	53	Water	
	6/27/02	0	52	Water	
SVE-08	5/15/02	56	2	>50,000	
	5/21/02	75	10	342	
	5/22/02	98	14	2190	
	5/23/02	76	15	402	Testing Completed
SVE-09	5/21/02	136	10	223	
	5/22/02	44	12	1150	
	5/23/02	44	12	362	
	6/7/02	365	64	639	
	6/10/02	63	14	421	
	6/13/02	62	10	156	
	6/14/02	62	12	381	Testing Completed
	6/17/02	44	11	585	
SVE-10	6/7/02	147	74	725	
	6/10/02	63	22	580	
	6/13/02	76	42	580	
	6/14/02	98	46	692	Testing Completed
	6/17/02	99	44	780	

Table 6.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-11	6/10/02	45	12	675	
	6/13/02	20	9	685	
	6/14/02	44	10	848	
	6/17/02	44	10	958	
	6/20/02	78	10	1160	
	6/21/02	89	4	-	
	6/24/02	20	8	834	
	6/25/02	63	8	501	
	6/26/02	56	8	585	Testing Completed
	6/27/02	44	6	675	
SVE-12	4/22/02	60	11	>50,000	
	4/23/02	61	26	>50,000	
	4/24/02	98	23	>50,000	
	5/15/02	56	4	1462	Testing Completed
SVE-13	6/7/02	0	80	890	
	6/10/02	0	42	811	
	6/13/02	0	42	920	
	6/14/02	0	46	1102	
	6/17/02	0	45	1120	
	6/20/02	0	70	1406	
	6/21/02	0	68	1005	
	6/24/02	0	68	1487	
	6/25/02	0	61	776	
	6/26/02	0	52	913	
	6/27/02	0	52	1071	
SVE-14	4/22/02	60	14	>50,000	
	4/23/02	57	26	>50,000	
	4/24/02	44	24	>50,000	
	5/15/02	63	24	6.10%	
	5/21/02	75	52	568	
	5/22/02	76	58	650	
	5/23/02	62	62	694	Testing Completed
SVE-15	6/20/02	284	25	1601	
	6/21/02	178	22	1074	
	6/24/02	205	24	1523	
	6/25/02	199	23	815	
	6/26/02	183	20	892	Testing Completed
	6/27/02	188	20	998	

Table 6.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-16	6/20/02	127	20	1530	
	6/21/02	109	20	985	
	6/24/02	101	18	1600	
	6/25/02	100	20	743	
	6/26/02	93	18	806	Testing Completed
	6/27/02	99	15	948	
SVE-17	6/7/02	44	74	371	
	6/10/02	45	40	460	
	6/13/02	44	40	862	
	6/14/02	44	42	546	Testing Completed
	6/17/02	44	42	645	
SVE-18	6/20/02	63	65	1405	
	6/21/02	-	64	Fluid	
	6/24/02	53	62	1570	
	6/25/02	63	56	782	
	6/26/02	44	48	910	Testing Completed
	6/27/02	140	38	1027	
SVE-19	5/15/02	88	22	>50,000	
	5/21/02	167	52	142	
	5/22/02	186	58	4650	
	5/23/02	207	62	218	Testing Completed
SVE-20	6/7/02	63	76	137	
	6/10/02	63	42	182	
	6/13/02	62	42	415	
	6/14/02	44	44	91	Testing Completed
	6/17/02	44	44	181	
SVE-21	6/10/02	63	12	106	
	6/13/02	62	12	443	
	6/14/02	62	14	71	Testing Completed
	6/17/02	63	15	236	
SVE-22	5/15/02	0	28	10.90%	
	5/21/02	0	58	350	
	6/20/02	0	62	434	
	6/21/02	0	62	385	
	6/24/02	0	62	1019	
	6/25/02	0	55	339	
	6/26/02	0	38	473	
	6/27/02	0	48	414	

Table 6.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-23	6/20/02	127	12	1536	
	6/21/02	99	12	1180	
	6/24/02	142	12	1650	
	6/25/02	140	14	892	Testing Completed
	6/27/02	125	12	1222	
SVE-24	4/24/02	76	24	>50,000	
	5/15/02	84	24	>50,000	
	5/21/02	96	58	764	
	5/22/02	116	60	660	
	5/23/02	62	12	1488	Testing Completed
SVE-25	5/15/02	77	2	6.20%	
	5/21/02	106	10	645	
	5/22/02	116	12	780	
	5/23/02	71	2	1312	Testing Completed
SVE-26	6/10/02	63	20	226	
	6/13/02	68	20	220	
	6/14/02	76	22	141	Testing Completed
	6/17/02	63	22	295	
SVE-27	4/24/02	0	25	>50,000	
	5/15/02	63	0	245	
	5/21/02	61	0	349	
	5/22/02	62	0	120	
	5/23/02	62	0	427	
	6/20/02	63	2	165	
	6/21/02	99	2	0	
	6/24/02	142	4	30	
	6/25/02	133	10	0	
	6/26/02	118	8	6	Testing Completed
	6/27/02	117	6	5	
SVE-28	6/7/02	44	70	164	
	6/10/02	45	39	325	
	6/13/02	0	39	155	
	6/14/02	0	42	262	
	6/17/02	0	41	288	
	6/20/02	45	64	310	
	6/21/02	63	64	128	
	6/24/02	45	62	161	Testing Completed
	6/25/02	0	58	0	
	6/26/02	0	48	196	
	6/27/02	0	48	205	

Table 6.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-29	6/10/02	45	30	610	
	6/13/02	20	30	777	
	6/14/02	44	34	840	Testing Completed
	6/17/02	44	32	923	
SVE-30	6/10/02	0	35	1097	
	6/13/02	0	35	1730	
	6/14/02	0	38	1171	
	6/17/02	0	38	1182	
	6/20/02	0	60	1575	
	6/21/02	0	60	1142	
	6/24/02	0	60	1550	
	6/25/02	0	52	670	
	6/26/02	0	46	930	
	6/27/02	0	44	651	
SVE-31	4/24/02	0	24	>50,000	
	5/15/02	0	22	>50,000	
	5/21/02	0	50	710	
	6/20/02	0	60	1138	
	6/21/02	0	58	965	
	6/24/02	0	60	1200	
	6/25/02	0	53	587	
	6/26/02	0	46	784	
	6/27/02	0	44	841	
SVE-32	5/15/02	84	14	8735	
	5/21/02	96	20	1007	
	5/22/02	98	22	740	
	5/23/02	Water	62	785	
	6/20/02	63	12	1154	
	6/21/02	63	12	1140	
	6/24/02	45	12	1350	
	6/25/02	172	38	900	
	6/26/02	154	40	1035	Testing Completed
	6/27/02	153	40	1180	
SVE-33	6/10/02	78	47	1174	
	6/13/02	62	39	1940	
	6/14/02	76	42	1400	Testing Completed
	6/17/02	77	39	1501	

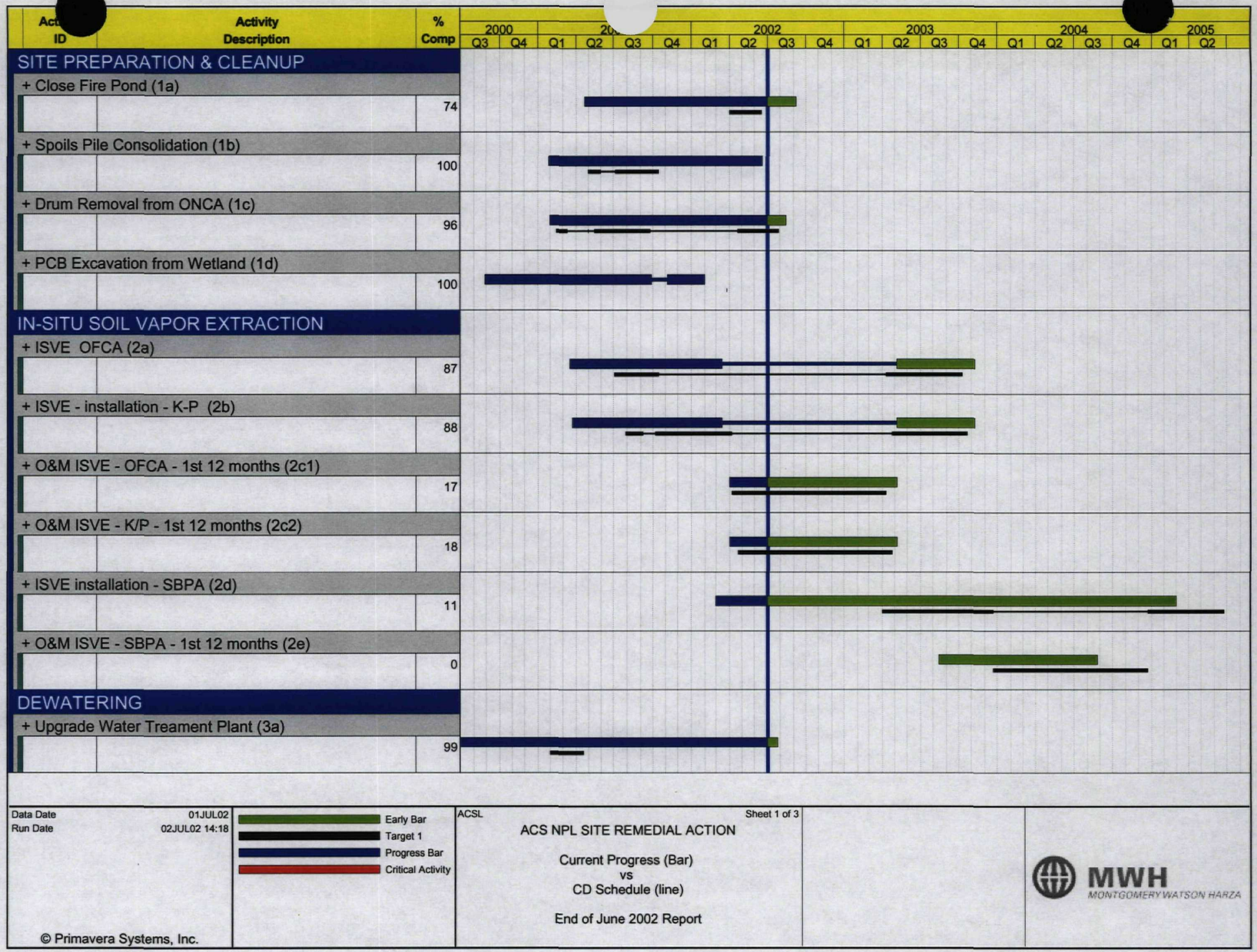
Table 6.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-34	6/7/02	171	70	660	
	6/13/02	87	39	1800	
	6/14/02	88	42	903	
	6/17/02	88	41	904	
	6/20/02	63	42	1520	
	6/21/02	99	42	1185	
	6/24/02	78	42	1549	
	6/25/02	63	39	913	
	6/26/02	53	36	1034	Testing Completed
	6/27/02	44	36	1226	
SVE-35	6/10/02	0	39	1740	
	6/13/02	62	26	1600	
	6/14/02	62	28	1364	
	6/17/02	63	27	1478	
	6/20/02	63	25	1905	
	6/21/02	63	24	1463	
	6/24/02	45	24	1780	
	6/25/02	44	22	1163	
	6/26/02	40	22	1248	Testing Completed
	6/27/02	44	22	1440	
SVE-36	6/10/02	45	37	944	
	6/13/02	0	35	1640	
	6/14/02	0	40	1332	
	6/17/02	0	38	2619	
	6/20/02	0	60	1269	
	6/21/02	0	58	1149	
	6/24/02	0	58	1430	
	6/25/02	0	52	644	
	6/26/02	0	44	840	
	6/27/02	0	44	841	
SVE-37	5/15/02	84	28	1.50%	
	5/21/02	122	55	876	
	5/22/02	132	62	790	
	5/23/02	125	56	1493	Testing Completed
SVE-38	6/20/02	0	64	1372	
	6/21/02	0	62	872	
	6/24/02	0	62	1576	
	6/25/02	0	55	645	
	6/26/02	0	50	745	
	6/27/02	0	48	900	

Table 6.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-39	6/10/02	78	11	996	
	6/13/02	70	8	1710	
	6/14/02	76	10	1166	Testing Completed
	6/17/02	77	10	1164	
SVE-40	6/10/02	63	13	898	
	6/13/02	70	10	1620	
	6/14/02	76	12	1065	Testing Completed
	6/17/02	77	11	1103	
SVE-41	6/10/02	78	10	993	
	6/13/02	68	8	1875	
	6/14/02	76	10	1226	Testing Completed
	6/17/02	77	11	1225	
SVE-42	5/15/02	0	-	1.80%	
	5/21/02	0	55	560	
	6/20/02	0	62	1478	
	6/21/02	44	62	1005	
	6/24/02	0	61	1407	
	6/25/02	0	55	758	
	6/26/02	0	48	866	
	6/27/02	0	48	1091	

Notes:
"-" = data not collected
"Water" - water present in vapor stream, preventing data collection



Data Date 01JUL02
Run Date 02JUL02 14:18

Early Bar
Target 1
Progress Bar
Critical Activity

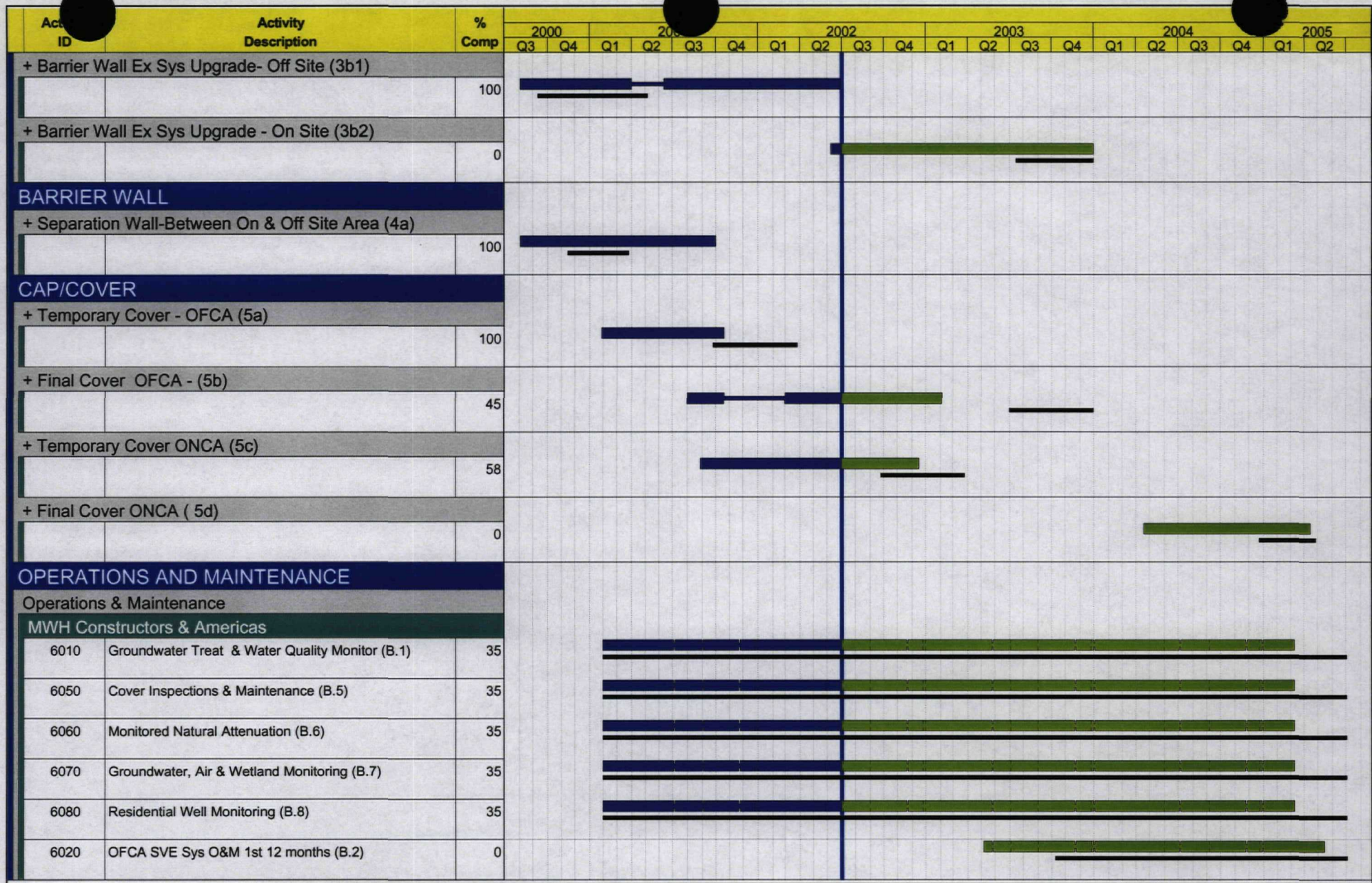
ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of June 2002 Report

MWH
MONTGOMERY WATSON HARZA



Data Date 01JUL02
Run Date 02JUL02 14:18

Early Bar
Target 1
Progress Bar
Critical Activity

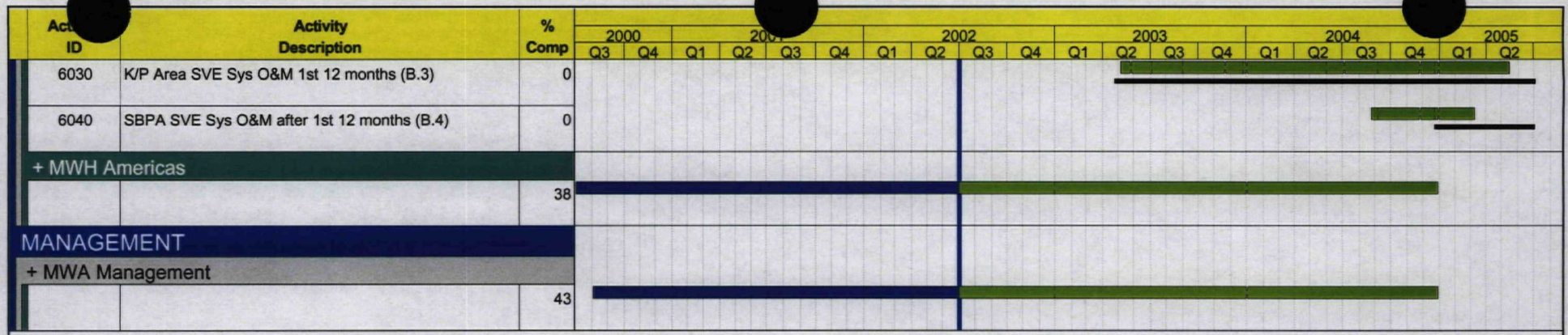
ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of June 2002 Report

MWH
MONTGOMERY WATSON HARZA



Data Date 01JUL02
Run Date 02JUL02 14:18

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

Sheet 3 of 3

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of June 2002 Report

MWH
MONTGOMERY WATSON HARZA

MWH
MONTGOMERY WATSON HARZA

August 9, 2002

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

√KA. 8/15/02.

Prabhakar Kasarabada
Project Manager
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: Progress Report – July 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Kasarabada:

This monthly progress report is for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of July 2002. The number and letter in parentheses at the end of each heading provides a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.)

ISVE Wells and Conveyance Piping

MWH is continuing to confirm proper operation of all the ISVE wells. To date, operation of 32 of the 42 ISVE wells has been confirmed. System monitoring results are attached in Table 5. Confirmation of the remaining ten wells will continue in August 2002.

Eagle Services was on site from July 25 to July 31 to vacuum out accumulated sediment in some of the ISVE wells. The ISVE well prove-out process has continued since Eagle completed their work.

27755 Diehl Road
Suite 300
Warrenville, Illinois
60555

Tel: 630 836 8900
Fax: 630 836 8959

Thermal Oxidizer/Scrubber System

The ISVE system was shutdown from July 2 to July 11 due to work on the Groundwater Treatment Plant's (GWTP) central processing unit (CPU) and maintenance activities for the thermal oxidizer. The maintenance activities included rerouting some of the wiring on the unit to improve safety.

Performance Standard Verification Plan (PSVP) Sampling

During July 2002, MWH completed the eight initial rounds of off-gas compliance sampling of both the thermal oxidizer unit (ISVE system) and the catalytic oxidizer unit (GWTP) as described in the Performance Standard Verification Plan (PSVP). These samples are used to determine the destruction efficiency of the units and compliance with discharge limits. The fifth, sixth, seventh, and eighth rounds were collected on July 2, 12, 18, and 25, respectively. Air Toxics Laboratories in Folsom, California analyzed the samples for volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC).

Analytical data from the samples collected on June 21 and 28, 2002 (Rounds 3 and 4) have been validated by MWH and are included in Tables 1, 2, 3, and 4 attached. The data indicate, as shown in Tables A and B, that both systems are operating within their permitted requirements of discharging less than three pounds of VOCs per day.

The eight initial sampling rounds are now complete and the validated data from Rounds 5 through 8 will be included in future monthly progress reports. After the data from the first eight rounds have been reviewed, MWH will evaluate the need for future sampling.

Recompaction of Portions of the Off-Site Area Cover

Heritage Industrial Services (HIS) completed compaction of the clay cover over the ISVE yard piping on July 12. Two of the ISVE yard pipes were damaged by Heritage during their work. These pipes were repaired, pressure tested again, and confirmed to be intact.

Interim Cover of On-Site Area (5.c.)

MWH distributed the request for bid (RFB) for the construction of the On-Site Area Interim Cover on July 26. A site walk was held for prospective bidders on August 1. As part of the RFB, MWH has finalized the design grades for the interim cover. Construction is scheduled to begin in the late summer/early fall of 2002.

To meet the design grades in the On-Site Area, Midwest Environmental, Inc. (MEI) began work on July 22 to relocate a portion of the polychorinated biphenyls (PCB)-impacted soil that had been stored in the On-Site Area Fire Pond to Swale 5 in the Off-Site Area. A kickoff and health and safety meeting was held on July 23 prior to beginning the work of transporting the impacted material.

MEI prepared the Swale 5 area by removing the 12-inch thick clay cover to receive the relocated material. The clay was stockpiled at the perimeter of Swale 5. MEI then transported the PCB-impacted soil from the On-Site Area and placed it in Swale 5. The clay was then replaced on top of the PCB-impacted soil in the Swale 5 area, wetted,

and compacted with a Sheep's Foot Compactor and a Smooth-Drum Roller until it met the compaction and moisture requirements for the interim clay cover. Great Lakes Environmental performed the compaction and moisture testing. The work was completed on July 31.

Final Cover of Off-Site Area (5.d.)
Environmental Contractors of Illinois (ECI), the subcontractor selected to install the final cover in the Off-Site Area, has submitted a work plan, health and safety plan, and other required documentation to MWH. MWH will review the documents and recommend modification if necessary. Work is expected to begin in August 2002 and is anticipated to last four to six weeks.

In preparation for the construction of the final cover, MWH developed a list of maintenance items to be completed in the Off-Site Area. This list included the installation of protective structures around piezometers and extraction trench cleanouts, raising manholes at EW-12 and EW-13, implementation of erosion controls, and repair of erosion damage to the clay layer. MEI completed much of this preparatory work during June and the remaining work was completed in July.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate the participants. During July 2002, weekly construction meetings were held on the 11th, 18th, and 25th. The minutes from each meeting are faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)
The Groundwater Treatment Plant (GWTP) continued to operate as designed during July 2002. The GWTP is currently treating 40 to 50 gallons per minute (gpm) of influent water. All three On-Site Barrier Wall Extraction System (BWES) wells (EW-10, EW-17, and EW-18), nine of the Off-Site BWES wells (EW-11, EW-12, EW-15, EW-16, EW-19, EW-19A, EW-20, EW-20A, and EW-20B), and the Perimeter Groundwater Extraction System (PGCS) are currently bringing influent to the GWTP. EW-12 was temporarily taken off line to raise the manhole around the well to a grade above the final cover in the Off-Site Area, but was brought back on line again during the week of August 5.

The activated sludge treatment component has continued to remove contaminants with increased efficiency due to continued biomass growth. Prompted by operational difficulties encountered during the past winter, MWH conducted a pilot test to determine if heat from the water in the scrubber units can be recovered and transferred to heat to the biotank during the winter. MWH is evaluating the results of the test to determine whether the water-to-water heat exchanger is a viable option.

During July 2002, MWH continued maintenance on the thickening rake in the Lamella clarifier. During the week of July 15, piping was installed to distribute treated effluent from the GWTP to the On-Site and Off-Site Areas for use in dust control during cover installation.

The PSVP for the GWTP established a quarterly sampling schedule for the GWTP effluent. However, during the past several years as the water treatment system has been modified and optimized, MWH has conducted sampling on a monthly basis to maintain a closer documentation of system performance. The water treatment components are now functioning efficiently and showing stability. Therefore, on June 5, 2002, MWH distributed a memorandum recommending that the sampling frequency be reduced to a monthly timeframe for VOCs and pH, and a quarterly timeframe for all other analytes, as specified in the PSVP. During June and July, full monthly effluent compliance samples were collected while the Agencies formulated their opinion regarding the June 5 memorandum.

The June 2002 monthly effluent compliance sample for the GWTP was collected on June 20, 2002. Analytical results are attached in Table 2.2. The July 2002 sample was collected on July 30, however, MWH has not yet received the analytical results from this sample. A summary will be included in next month's progress report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)
In March 2002, MWH submitted responses to Agency comments on the revised Long-Term Groundwater Monitoring Plan. Upon receipt of notification of Agency approval, MWH will distribute copies of the approved Plan. The next scheduled groundwater monitoring event is September 2002.

Residential Well Water Quality Monitoring (B.8.)
The annual round of residential well sampling is scheduled for September 2002.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to or approved by the U.S. EPA and IDEM.

Reports Being Prepared

- **Drum Removal in On-Site Containment Area (1.c.)** – the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in August 2002.

- **Groundwater Plume Treatment (1.e.)** – a report summarizing the South Area Oxygen Release Compound (ORC®) Pilot Study is scheduled to be submitted to the Agencies. The report is currently undergoing client review.

- **In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.)** - the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in October 2002.

- **Groundwater, Air Quality, Wetland, and Monitoring (B.7)** – the March 2002 Groundwater Monitoring Quarterly Report has been completed and will be submitted to the Agencies during August.

Reports Recently Submitted

- **PCB Sediment Excavation from Wetland (1.d.)** - the Construction Completion Report was submitted to the Agencies on July 1.

- **Groundwater Treatment Plant Upgrade (3.a.)** – the as-built drawings were submitted to the Agencies on July 25, along with a brief summary of the construction upgrade process.

- **Barrier Wall Extraction System (BWES) Upgrades (3.b.)** – the Construction Completion Report was submitted to the Agencies on July 16.

The next monthly report will be forwarded to U.S. EPA and IDEM by September 10, 2002. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH

For Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Updated Schedule of Remedial Activities
Table A – Calculated Pounds Per Hour VOCs – Catalytic Oxidizer (ME-106)
Table B - Calculated Pounds Per Hour VOCs – Thermal Oxidizer (ME-205)
Table 1 – Thermal Oxidizer (ME-205) Results for Method TO-14 (VOCs)
Table 2 – Thermal Oxidizer (ME-205) Results for Method TO-13 (SVOCs)
Table 3 – Catalytic Oxidizer (ME-106) Results for Method TO-14 (VOCs)
Table 4 – Catalytic Oxidizer (ME-106) Results for Method TO-13 (SVOCs)
Table 5 – ISVE System Operation Data, OFCA and KP Area Systems
Table 2.2 – Summary of Effluent Analytical Results – Second Quarter 2002

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Jim Vondracek - Ashland Chemical Company
Larry Campbell – Black & Veatch
Rob Adams – MWH
Peter Vagt – MWH
Travis Klingforth – MWH
FILE

TMK/CAD/PJV/TAL/RAA/jmf
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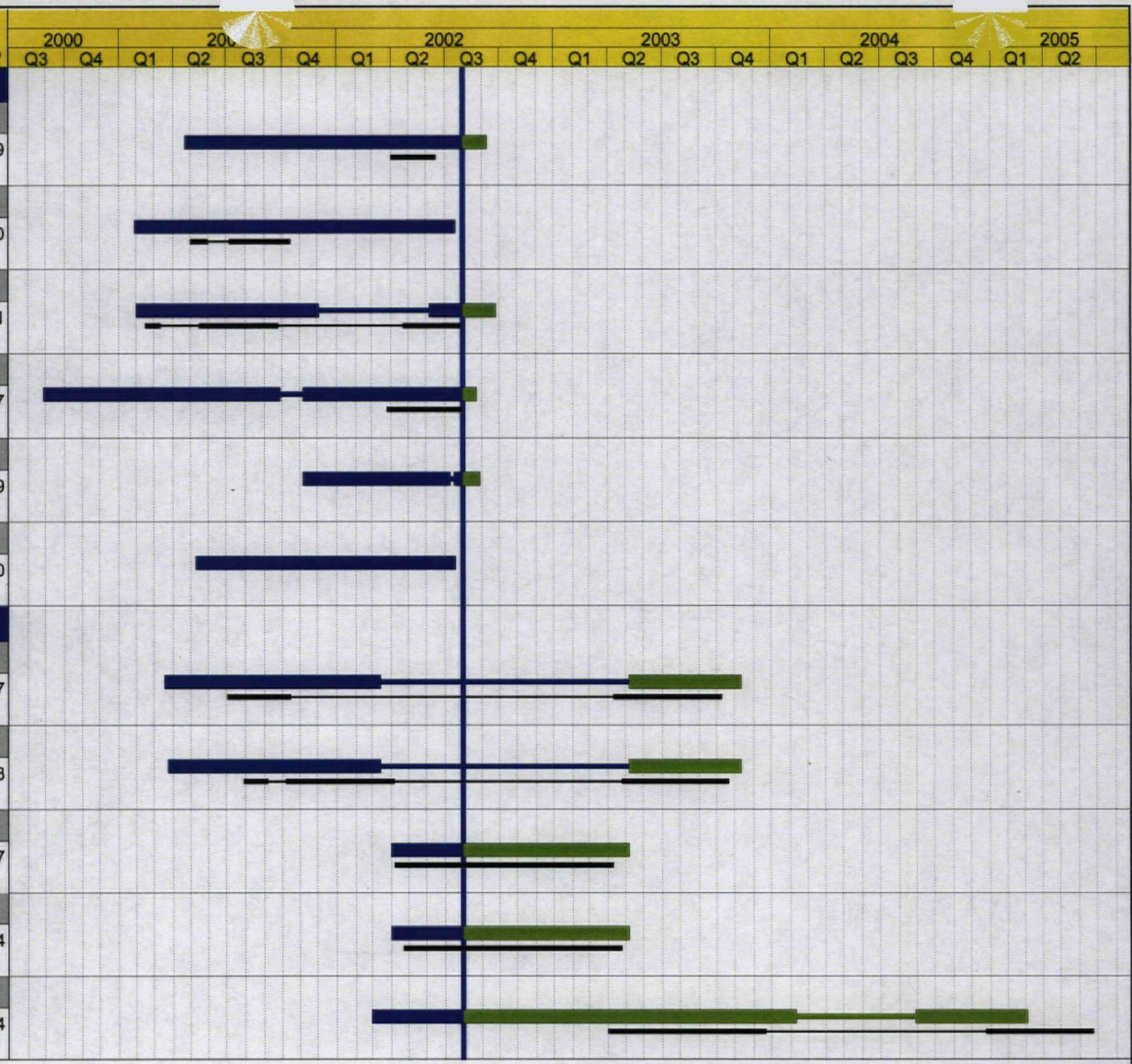
Acti ID	Activity Description	% Comp
SITE PREPARATION & CLEANUP		
	+ Close Fire Pond (1a)	89
	+ Spoils Pile Consolidation (1b)	100
	+ Drum Removal from ONCA (1c)	91
	+ PCB Excavation from Wetland (1d)	97
	+ Barrier Wall Ex Sys Upgrade- Off Site (3b1)	79
	+ Temporary Cover - OFCA (5a)	100
IN-SITU SOIL VAPOR EXTRACTION		
	+ ISVE OFCA (2a)	87
	+ ISVE - installation - K-P (2b)	88
	+ O&M ISVE - OFCA - 1st 12 months (2c1)	17
	+ O&M ISVE - K/P - 1st 12 months (2c2)	44
	+ ISVE installation - SBPA (2d)	4



Data Date 02AUG02
Run Date 09AUG02 08:55

Early Bar
Target 1
Progress Bar
Critical Activity

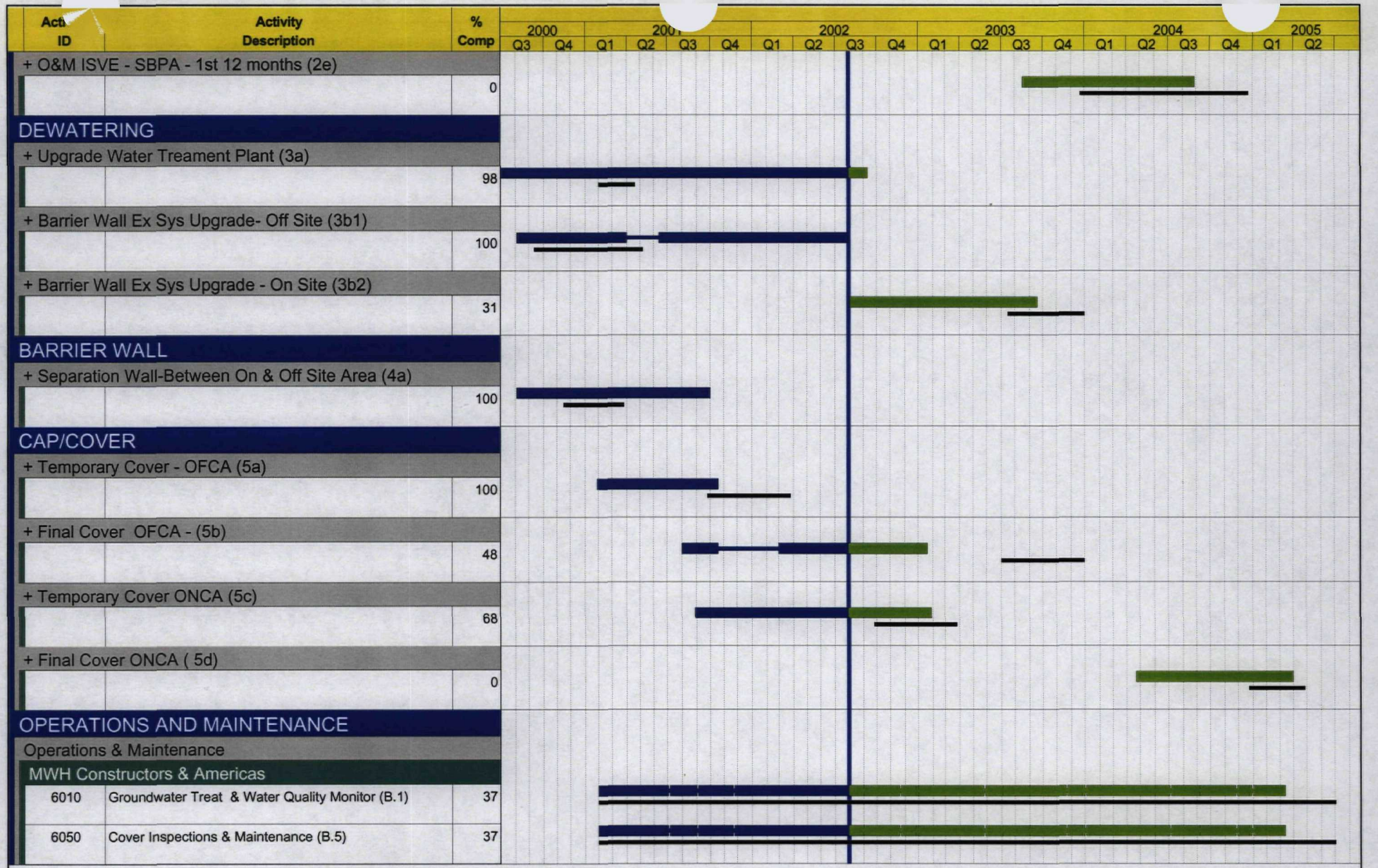
ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of July 2002 Report

MWH
MONTGOMERY WATSON HARZA



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Run Date 09AUG02 08:55

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

Sheet 2 of 3

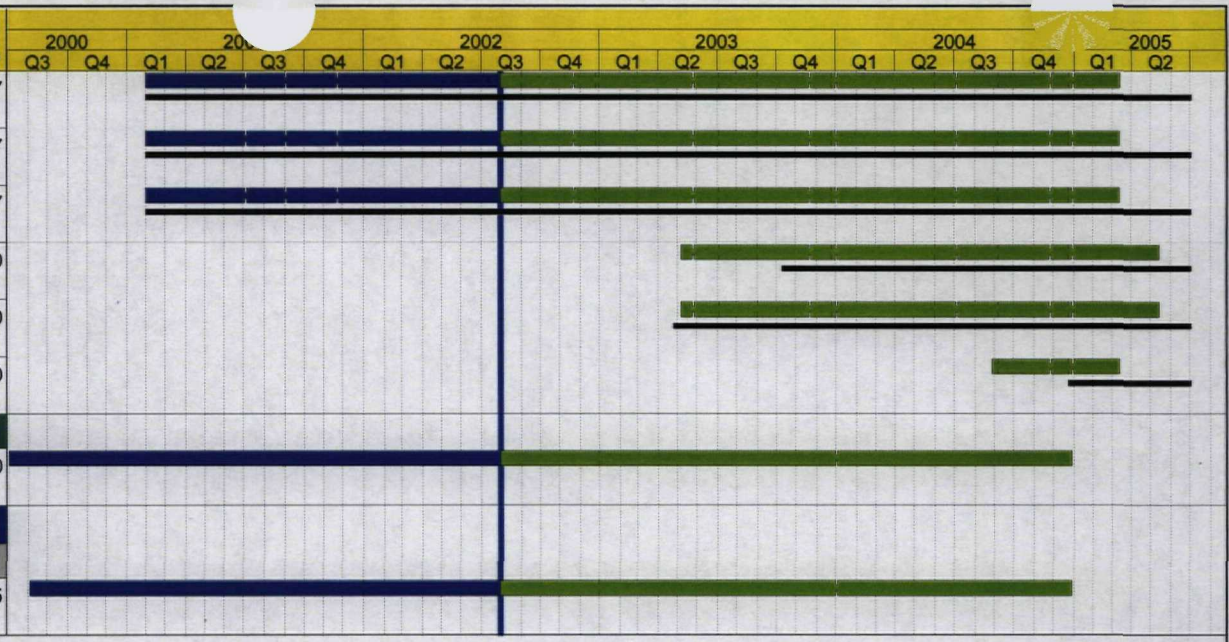
ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of July 2002 Report

MWH
MONTGOMERY WATSON HARZA

Act ID	Activity Description	% Comp
6060	Monitored Natural Attenuation (B.6)	37
6070	Groundwater, Air & Wetland Monitoring (B.7)	37
6080	Residential Well Monitoring (B.8)	37
6020	OFCA SVE Sys O&M 1st 12 months (B.2)	0
6030	K/P Area SVE Sys O&M 1st 12 months (B.3)	0
6040	SBPA SVE Sys O&M after 1st 12 months (B.4)	0
+ MWH Americas		
		40
MANAGEMENT		
+ MWA Management		
		45



Data Date 02AUG02
Run Date 09AUG02 08:55

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of July 2002 Report

MWH
MONTGOMERY WATSON HARZA

Table A
Calculated Pounds Per Hour VOCs
Catalytic Oxidizer (ME-106) for Method TO-14 (VOCs)
American Chemical Service, Griffith, Indiana

		Round 3 - Sampled 6/21/02								
Compounds	**Units**	**Influent IN1**			**Influent IN2**			**Effluent EF1**		
Method TO-14 (VOCs)		Rpt. Limit	Amount	Flags	Rpt. Limit	Amount	Flags	Rpt. Limit	Amount	Flags
Chloromethane	µg/m³	140	ND		150	ND		60	370	
Vinyl Chloride	µg/m³	170	6,800		180	6,700		75	750	
Bromomethane	µg/m³	260	ND		280	ND		110	ND	
Chloroethane	µg/m³	180	4,600		190	4,500		77	340	
1,1-Dichloroethene	µg/m³	270	110	J/J	280	94	J/J	120	110	J/J
Methylene Chloride	µg/m³	240	5,900		250	5,700		100	750	
1,1-Dichloroethane	µg/m³	280	3,600		290	3,500		120	220	
cis-1,2-Dichloroethene	µg/m³	270	38,000		280	37,000		120	3,000	
Chlororform	µg/m³	330	75	J/J	350	ND		140	ND	
1,1,1-Trichloroethane	µg/m³	370	1,700		390	1,600		160	66	J/J
Carbon Tetrachloride	µg/m³	430	ND		450	ND		180	ND	
Benzene	µg/m³	220	48,000		230	48,000		94	4,700	
1,2-Dichloroethane	µg/m³	280	ND		290	ND		120	ND	
Trichloroethene	µg/m³	360	340	J/J	380	330	J/J	160	49	J/J
1,2-Dichloropropane	µg/m³	310	370		330	370		140	36	J/J
cis-1,3-Dichloropropene	µg/m³	310	ND		320	ND		130	ND	
Toluene	µg/m³	260	33,000		270	32,000		110	2,200	
trans-1,3-Dichloropropene	µg/m³	310	ND		320	ND		130	ND	
1,1,2-Trichloroethane	µg/m³	370	ND		390	ND		160	ND	
Tetrachloroethene	µg/m³	460	130	J/J	490	110	J/J	200	36	J/J
Chlorobenzene	µg/m³	310	3,500		330	3,500		130	420	
Ethylbenzene	µg/m³	300	7,600		310	7,500		130	370	
m,p-Xylene	µg/m³	300	39,000		310	38,000		130	1,600	
o-Xylene	µg/m³	300	12,000		310	12,000		130	540	
Styrene	µg/m³	290	ND		300	ND		120	97	J/J
1,1,2,2-Tetrachloroethane	µg/m³	470	ND		490	ND		200	ND	
Acetone	µg/m³	650	2,800		680	2,700		280	490	
Carbon Disulfide	µg/m³	850	ND		890	ND		360	ND	
trans-1,2-Dichloroethene	µg/m³	1100	240	J/J	1100	ND		460	350	J/J
2-Butanone (MEK)	µg/m³	800	1,800		840	1,800		340	25,000	
Bromodichloromethane	µg/m³	1800	ND		1900	ND		780	ND	
4-Methyl-2-pentanone	µg/m³	1100	2,000		1200	1,800		480	93	J/J
2-Hexanone	µg/m³	1100	ND		1200	ND		480	ND	
Dibromochloromethane	µg/m³	2300	ND		2400	ND		1000	ND	
Bromoform	µg/m³	2800	ND		3000	ND		1200	ND	
Total	µg/m³	217,420			214,119			44,082		
Total VOCs per hour[1]	lbs/hr	**0.285**			**0.281**			**0.058**		

(IDEM Effluent Limit is 3 lbs/hr)

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
Rpt. Limit - Reporting Limit
ND - Non-detect

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

1. Pounds per hour VOCs calculated by summing the mass of each compound from Form 1's (in µg/m³) and using an average flow rate of 350 standard cubic feet per minute (SCFM) to convert to pounds per hour for the Catalytic Oxidizer. In the case of a non-detect, one-half of the reporting limit has been used when summing the mass values.

Table A
Calculated Pounds Per Hour VOCs
Catalytic Oxidizer (ME-106) for Method TO-14 (VOCs)
American Chemical Service, Griffith, Indiana

		Round 4 - Sampled 6/28/02								
Compounds	**Units**	**Influent IN1**			**Influent IN2**			**Effluent EF1**		
Method TO-14 (VOCs)		Rpt. Limit	Amount	Flags	Rpt. Limit	Amount	Flags	Rpt. Limit	Amount	Flags
Chloromethane	µg/m³	140	ND		140	ND		15	370	
Vinyl Chloride	µg/m³	170	10,000		170	12,000		19	1,100	
Bromomethane	µg/m³	260	ND		260	ND		29	ND	
Chloroethane	µg/m³	180	5,300		180	6,200		20	450	
1,1-Dichloroethene	µg/m³	270	100	J/J	270	120	J/J	29	130	
Methylene Chloride	µg/m³	240	3,000		240	4,400		26	450	
1,1-Dichloroethane	µg/m³	280	3,200		280	4,000		30	240	
cis-1,2-Dichloroethene	µg/m³	270	31,000		270	41,000		29	3,300	
Chlororform	µg/m³	330	57	J/J	330	65	J/J	36	6.0	J/J
1,1,1-Trichloroethane	µg/m³	370	1,900		370	2,300		40	84	
Carbon Tetrachloride	µg/m³	430	ND		430	ND		47	ND	
Benzene	µg/m³	220	46,000		220	55,000		24	5,600	
1,2-Dichloroethane	µg/m³	280	ND		280	ND		30	ND	
Trichloroethene	µg/m³	360	370		360	490		40	46	
1,2-Dichloropropane	µg/m³	310	280	J/J	310	410		34	21	J/J
cis-1,3-Dichloropropene	µg/m³	310	ND		310	ND		34	ND	
Toluene	µg/m³	260	29,000		260	45,000		28	2,500	
trans-1,3-Dichloropropene	µg/m³	310	ND		310	ND		34	ND	
1,1,2-Trichloroethane	µg/m³	370	ND		370	ND		40	ND	
Tetrachloroethene	µg/m³	460	220	J/J	460	210	J/J	50	47	J/J
Chlorobenzene	µg/m³	310	2,700		310	3,800		34	370	
Ethylbenzene	µg/m³	300	6,800		300	10,000		32	410	
m,p-Xylene	µg/m³	300	37,000		300	53,000		32	2,000	
o-Xylene	µg/m³	300	9,600		300	15,000		32	570	
Styrene	µg/m³	290	270	J/J	290	ND		32	94	
1,1,2,2-Tetrachloroethane	µg/m³	470	ND		470	ND		51	ND	
Acetone	µg/m³	650	850		650	970		70	120	
Carbon Disulfide	µg/m³	850	ND		850	ND		92	23	J/J
trans-1,2-Dichloroethene	µg/m³	1100	ND		1100	ND		120	220	
2-Butanone (MEK)	µg/m³	800	610	J/J	800	720	J/J	88	97	
Bromodichloromethane	µg/m³	1800	ND		1800	ND		200	ND	
4-Methyl-2-pentanone	µg/m³	1100	1,000	J/J	1100	1,400		120	42	J/J
2-Hexanone	µg/m³	1100	ND		1100	ND		120	ND	
Dibromochloromethane	µg/m³	2300	ND		2300	ND		250	ND	
Bromoform	µg/m³	2800	ND		2800	ND		310	ND	
Total	µg/m³	195,517			262,490			18,863		
Total VOCs per hour[1]	lbs/hr	**0.256**			**0.344**			**0.025**		

(IDEM Effluent Limit is 3 lbs/hr)

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
Rpt. Limit - Reporting Limit
ND - Non-detect

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

1. Pounds per hour VOCs calculated by summing the mass of each compound from Form 1's (in µg/m³) and using an average flow rate of 350 standard cubic feet per minute (SCFM) to convert to pounds per hour for the Catalytic Oxidizer. In the case of a non-detect, one-half of the reporting limit has been used when summing the mass values.

Table B
Calculated Pounds Per Hour VOCs
Thermal Oxidizer (ME-205) for Method TO-14 (VOCs)
American Chemical Service, Griffith, Indiana

		Round 3 - Sampled 6/21/02								
Compounds	Units	Influent IN1			Influent IN2			Effluent EF1		
Method TO-14 (VOCs)		Rpt. Limit	Amount	Flags	Rpt. Limit	Amount	Flags	Rpt. Limit	Amount	Flags
Chloromethane	µg/m³	12,000	ND		15,000	ND		1.5	4.1	
Vinyl Chloride	µg/m³	14,000	20,000		18,000	20,000		1.8	3.5	
Bromomethane	µg/m³	22,000	ND		28,000	ND		2.8	ND	
Chloroethane	µg/m³	15,000	10,000	J/J	19,000	10,000	J/J	1.9	1.8	J/J
1,1-Dichloroethene	µg/m³	22,000	ND		28,000	ND		2.8	6.5	
Methylene Chloride	µg/m³	20,000	1,100,000		25,000	1,100,000		2.5	50	
1,1-Dichloroethane	µg/m³	23,000	410,000		29,000	440,000		2.9	11	
cis-1,2-Dichloroethene	µg/m³	22,000	340,000		28,000	350,000		2.8	28	
Chlororform	µg/m³	28,000	96,000		35,000	120,000		3.5	4.2	
1,1,1-Trichloroethane	µg/m³	31,000	1,800,000		39,000	2,300,000		3.9	30	
Carbon Tetrachloride	µg/m³	35,000	7,800	J/J	45,000	ND		4.5	2.3	J/J
Benzene	µg/m³	18,000	700,000		23,000	730,000		2.3	34	
1,2-Dichloroethane	µg/m³	23,000	ND		29,000	34,000		2.9	1.4	J/J
Trichloroethene	µg/m³	30,000	770,000		38,000	840,000		3.8	20	
1,2-Dichloropropane	µg/m³	26,000	16,000	J/J	33,000	ND		3.3	ND	
cis-1,3-Dichloropropene	µg/m³	26,000	ND		32,000	ND		3.2	ND	
Toluene	µg/m³	21,000	4,200,000		27,000	4,200,000		2.7	97	
trans-1,3-Dichloropropene	µg/m³	26,000	ND		32,000	ND		3.2	ND	
1,1,2-Trichloroethane	µg/m³	31,000	ND		39,000	ND		3.9	ND	
Tetrachloroethene	µg/m³	38,000	650,000		49,000	770,000		4.9	24	
Chlorobenzene	µg/m³	26,000	ND		33,000	ND		3.3	1.2	J/J
Ethylbenzene	µg/m³	24,000	340,000		31,000	320,000		3.1	7	
m,p-Xylene	µg/m³	24,000	1,200,000		31,000	1,100,000		3.1	25	
o-Xylene	µg/m³	24,000	340,000		31,000	330,000		3.1	8.6	
Styrene	µg/m³	24,000	ND		30,000	ND		3	ND	
1,1,2,2-Tetrachloroethane	µg/m³	39,000	ND		49,000	ND		4.9	ND	
Acetone	µg/m³	54,000	500,000		68,000	370,000		6.8	240	
Carbon Disulfide	µg/m³	70,000	7,200	J/J	89,000	ND		8.9	6.8	J/JB
trans-1,2-Dichloroethene	µg/m³	89,000	ND		110,000	ND		11	ND	
2-Butanone (MEK)	µg/m³	66,000	730,000		84,000	540,000		8.4	260	
Bromodichloromethane	µg/m³	150,000	ND		190,000	ND		19	ND	
4-Methyl-2-pentanone	µg/m³	92,000	550,000		120,000	360,000		12	33	
2-Hexanone	µg/m³	92,000	ND		120,000	ND		12	ND	
Dibromochloromethane	µg/m³	190,000	ND		240,000	ND		24	ND	
Bromoform	µg/m³	230,000	ND		300,000	ND		30	14	J/J
Total	µg/m³	14,288,000			14,640,500			958.55		
Total VOCs per hour[1]	lbs/hr	53.523			54.844			0.004		

(IDEM Effluent Limit is 3 lbs/hr)

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
Rpt. Limit - Reporting Limit
ND - Non-detect

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

1. Pounds per hour VOCs calculated by summing the mass of each compound from Form 1's (in µg/m³) and using an average flow rate of 1,000 standard cubic feet per minute (SCFM) to convert to pounds per hour for the Thermal Oxidizer. In the case of a non-detect, one-half of the reporting limit has been used when summing the mass values.

Table B
Calculated Pounds Per Hour VOCs
Thermal Oxidizer (ME-205) for Method TO-14 (VOCs)
American Chemical Service, Griffith, Indiana

		Round 4 - Sampled 6/28/02								
Compounds	**Units**	**Influent IN1**			**Influent IN2**			**Effluent EF1**		
Method TO-14 (VOCs)		Rpt. Limit	Amount	Flags	Rpt. Limit	Amount	Flags	Rpt. Limit	Amount	Flags
Chloromethane	µg/m³	12,000	ND		12,000	ND		1.5	6.1	
Vinyl Chloride	µg/m³	14,000	32,000		15,000	35,000		1.8	4.2	
Bromomethane	µg/m³	22,000	ND		22,000	ND		2.8	ND	
Chloroethane	µg/m³	15,000	ND		15,000	14,000	J/J	1.9	ND	
1,1-Dichloroethene	µg/m³	22,000	8,800	J/J	23,000	12,000	J/J	2.8	3.6	
Methylene Chloride	µg/m³	20,000	1,300,000		20,000	1,600,000		2.5	10	
1,1-Dichloroethane	µg/m³	23,000	400,000		23,000	460,000		2.9	1.4	J/J
cis-1,2-Dichloroethene	µg/m³	22,000	540,000		23,000	630,000		2.8	11	
Chlororform	µg/m³	28,000	81,000		28,000	95,000		3.5	9.6	
1,1,1-Trichloroethane	µg/m³	31,000	2,400,000		31,000	2,800,000		3.9	0.76	J/J
Carbon Tetrachloride	µg/m³	35,000	ND		36,000	ND		4.5	23	
Benzene	µg/m³	18,000	1,000,000		18,000	1,200,000		2.3	0.41	J/JB
1,2-Dichloroethane	µg/m³	23,000	60,000		23,000	76,000		2.9	ND	
Trichloroethene	µg/m³	30,000	1,000,000		31,000	1,200,000		3.8	2.6	J/J
1,2-Dichloropropane	µg/m³	26,000	ND		26,000	ND		3.3	ND	
cis-1,3-Dichloropropene	µg/m³	26,000	ND		26,000	ND		3.2	ND	
Toluene	µg/m³	21,000	4,900,000		22,000	5,300,000		2.7	0.66	J/J
trans-1,3-Dichloropropene	µg/m³	26,000	ND		26,000	ND		3.2	ND	
1,1,2-Trichloroethane	µg/m³	31,000	ND		31,000	ND		3.9	ND	
Tetrachloroethene	µg/m³	38,000	850,000		39,000	920,000		4.9	5.5	
Chlorobenzene	µg/m³	26,000	ND		26,000	ND		3.3	ND	
Ethylbenzene	µg/m³	24,000	480,000		25,000	510,000		3.1	ND	
m,p-Xylene	µg/m³	24,000	1,700,000		25,000	1,900,000		3.1	ND	
o-Xylene	µg/m³	24,000	470,000		25,000	520,000		3.1	ND	
Styrene	µg/m³	24,000	ND		24,000	ND		3	ND	
1,1,2,2-Tetrachloroethane	µg/m³	39,000	ND		39,000	ND		4.9	ND	
Acetone	µg/m³	54,000	270,000		54,000	330,000		6.8	13	
Carbon Disulfide	µg/m³	70,000	ND		72,000	ND		8.9	2.3	J/J
trans-1,2-Dichloroethene	µg/m³	89,000	ND		91,000	ND		11	ND	
2-Butanone (MEK)	µg/m³	66,000	440,000		68,000	520,000		8.4	320	
Bromodichloromethane	µg/m³	150,000	ND		150,000	ND		19	ND	
4-Methyl-2-pentanone	µg/m³	92,000	260,000		94,000	290,000		12	ND	
2-Hexanone	µg/m³	92,000	ND		94,000	ND		12	ND	
Dibromochloromethane	µg/m³	190,000	ND		200,000	ND		24	ND	
Bromoform	µg/m³	230,000	ND		240,000	ND		30	ND	
Total	µg/m³	16,743,300			18,969,500			488.98		
Total VOCs per hour[1]	lbs/hr	62.721			71.060			0.002		

(IDEM Effluent Limit is 3 lbs/hr)

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
Rpt. Limit - Reporting Limit
ND - Non-detect

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

1. Pounds per hour VOCs calculated by summing the mass of each compound from Form 1's (in µg/m³) and using an average flow rate of 1,000 standard cubic feet per minute (SCFM) to convert to pounds per hour for the Thermal Oxidizer. In the case of a non-detect, one-half of the reporting limit has been used when summing the mass values.

Table 1
Thermal Oxidizer (ME-205) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 3 - Sampled 6/21/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	2.0	NC	NC	NC
Vinyl Chloride	ppbv	7,600	7,600	1.3	99.98%	99.98%	99.98%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	3,700 J/J	3,800 J/J	0.68 J/J	NC	NC	NC
1,1-Dichloroethene	ppbv	ND	ND	1.6	NC	NC	NC
Methylene Chloride	ppbv	320,000	300,000	14	100.00%	100.00%	100.00%
1,1-Dichloroethane	ppbv	100,000	110,000	2.6	100.00%	100.00%	100.00%
cis-1,2-Dichloroethene	ppbv	83,000	87,000	6.8	99.99%	99.99%	99.99%
Chlororform	ppbv	19,000	23,000	0.85	100.00%	100.00%	100.00%
1,1,1-Trichloroethane	ppbv	320,000	420,000	5.5	100.00%	100.00%	100.00%
Carbon Tetrachloride	ppbv	1,200 J/J	ND	0.36 J/J	NC	NC	NC
Benzene	ppbv	220,000	220,000	10	100.00%	100.00%	100.00%
1,2-Dichloroethane	ppbv	ND	8,200	0.35 J/J	NC	NC	NC
Trichloroethene	ppbv	140,000	150,000	3.6	100.00%	100.00%	100.00%
1,2-Dichloropropane	ppbv	3,500 J/J	ND	ND	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	1,100,000	1,100,000	25	100.00%	100.00%	100.00%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	95,000	110,000	3.5	100.00%	100.00%	100.00%
Chlorobenzene	ppbv	ND	ND	0.26 J/J	NC	NC	NC
Ethylbenzene	ppbv	78,000	73,000	1.6	100.00%	100.00%	100.00%
m,p-Xylene	ppbv	260,000	240,000	5.7	100.00%	100.00%	100.00%
o-Xylene	ppbv	78,000	74,000	1.9	100.00%	100.00%	100.00%
Styrene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	210,000	150,000	100	99.93%	99.95%	99.94%
Carbon Disulfide	ppbv	2,300 J/J	ND	2.1 J/JB	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	ND	NC	NC	NC
2-Butanone (MEK)	ppbv	240,000	180,000	88	99.95%	99.96%	99.96%
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	130,000	86,000	7.9	99.99%	99.99%	99.99%
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	1.4 J/J	NC	NC	NC
Total	**ppbv**	**3,400,600**	**3,338,800**	**281.85**	**99.99%**	**100.00%**	**100.00%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume

Qualifiers:
J - Result is estimated
JB - Analyte detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 1
Thermal Oxidizer (ME-205) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 4 - Sampled 6/28/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	2.9	NC	NC	NC
Vinyl Chloride	ppbv	12,000	14,000	1.6	99.99%	99.99%	99.99%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	ND	5,200 J/J	ND	NC	NC	NC
1,1-Dichloroethene	ppbv	2,200 J/J	3,000 J/J	0.88	NC	NC	NC
Methylene Chloride	ppbv	370,000	440,000	2.9	100.00%	100.00%	100.00%
1,1-Dichloroethane	ppbv	97,000	110,000	0.34 J/J	NC	NC	NC
cis-1,2-Dichloroethene	ppbv	130,000	160,000	2.7	100.00%	100.00%	100.00%
Chlororform	ppbv	16,000	19,000	1.9	99.99%	99.99%	99.99%
1,1,1-Trichloroethane	ppbv	440,000	500,000	0.14 J/J	NC	NC	NC
Carbon Tetrachloride	ppbv	ND	ND	3.6	NC	NC	NC
Benzene	ppbv	320,000	370,000	0.12 J/JB	NC	NC	NC
1,2-Dichloroethane	ppbv	14,000	18,000	ND	NC	NC	NC
Trichloroethene	ppbv	190,000	220,000	0.48 J/J	NC	NC	NC
1,2-Dichloropropane	ppbv	ND	ND	ND	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	1,300,000	1,400,000	0.17 J/J	NC	NC	NC
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	120,000	130,000	0.80	100.00%	100.00%	100.00%
Chlorobenzene	ppbv	ND	ND	ND	NC	NC	NC
Ethylbenzene	ppbv	110,000	120,000	ND	NC	NC	NC
m,p-Xylene	ppbv	390,000	430,000	ND	NC	NC	NC
o-Xylene	ppbv	110,000	120,000	ND	NC	NC	NC
Styrene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	110,000	140,000	5.4	100.00%	100.00%	100.00%
Carbon Disulfide	ppbv	ND	ND	0.74 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	ND	NC	NC	NC
2-Butanone (MEK)	ppbv	140,000	170,000	110	99.92%	99.94%	99.93%
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	64,000	70,000	ND	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	**ppbv**	**3,933,000**	**4,431,000**	**132.68**	**100.00%**	**100.00%**	**100.00%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume

Qualifiers:
J - Result is estimated
JB - Analyte detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 2
Thermal Oxidizer (ME-205) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 3 - Sampled 6/21/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	5.3 /J	7.4 /J	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	4.9 /J	6.8 /J	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	71 /J	95 /J	ND	NC	NC	NC
2-Methylphenol (o-Cresol)	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachloroethane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Nitrobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Isophorone	µg	32 /J	46 /J	ND	NC	NC	NC
2-Nitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	3.1 /J	4.6 /J	ND	NC	NC	NC
Naphthalene	µg	38 /J	55 /J	ND	NC	NC	NC
4-Chloroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachlorobutadiene	µg	1.1 /J	1.5 /J	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Methylnaphthalene	µg	5.1 /J	7.1 /J	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dimethylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
3-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenzofuran	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Diethylphthalate	µg	0.47 J/J	0.44 J/J	0.39 J/J	NC	NC	NC
Fluorene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pentachlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Phenanthrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
di-n-Butylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Chrysene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	1.9 J/J	ND /UJ	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Total -	µg	NC	NC	NC	NC	NC	NC

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 2
Thermal Oxidizer (ME-205) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 4 - Sampled 6/28/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	6.8 /J	7.3 /J	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	61 /J	66 /J	ND	NC	NC	NC
2-Methylphenol (o-Cresol)	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachloroethane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Nitrobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Isophorone	µg	15 /J	16 /J	ND	NC	NC	NC
2-Nitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	0.98 J/J	1.1 /J	ND	NC	NC	NC
Naphthalene	µg	58 /J	60 /J	ND	NC	NC	NC
4-Chloroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachlorobutadiene	µg	0.87 J/J	0.92 J/J	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Methylnaphthalene	µg	7.9 /J	8.2 /J	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dimethylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
3-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenzofuran	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Diethylphthalate	µg	0.48 J/JB	0.32 J/JB	ND	NC	NC	NC
Fluorene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pentachlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Phenanthrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
di-n-Butylphthalate	µg	0.69 J/J	ND /UJ	ND	NC	NC	NC
Fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Chrysene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Total	µg	NC	NC	NC	NC	NC	NC

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 3
Catalytic Oxidizer (ME-106) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 3 - Sampled 6/21/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	ND	ND	170	NC	NC	NC
Vinyl Chloride	ppbv	2,600	2,600	290	88.85%	88.85%	88.85%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	1,700	1,700	130	92.35%	92.35%	92.35%
1,1-Dichloroethene	ppbv	28 J/J	23 J/J	26 J/J	NC	NC	NC
Methylene Chloride	ppbv	1,700	1,600	210	86.88%	87.65%	87.26%
1,1-Dichloroethane	ppbv	890	860	54	93.72%	93.93%	93.83%
cis-1,2-Dichloroethene	ppbv	9,400	9,200	750	91.85%	92.02%	91.93%
Chlororform	ppbv	15 J/J	ND	ND	NC	NC	NC
1,1,1-Trichloroethane	ppbv	300	290	12 J/J	NC	NC	NC
Carbon Tetrachloride	ppbv	ND	ND	ND	NC	NC	NC
Benzene	ppbv	15,000	15,000	1,400	90.67%	90.67%	90.67%
1,2-Dichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Trichloroethene	ppbv	63 J/J	60 J/J	9.0 J/J	NC	NC	NC
1,2-Dichloropropane	ppbv	78	78	7.7 J/J	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	8,500	8,400	570	93.21%	93.29%	93.25%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	19 J/J	17 J/J	5.3 J/J	NC	NC	NC
Chlorobenzene	ppbv	740	750	89	88.13%	87.97%	88.05%
Ethylbenzene	ppbv	1,700	1,700	84	95.06%	95.06%	95.06%
m,p-Xylene	ppbv	8,900	8,700	360	95.86%	95.96%	95.91%
o-Xylene	ppbv	2,800	2,700	120	95.56%	95.71%	95.63%
Styrene	ppbv	ND	ND	22 J/J	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	1,200	1,100	200	81.82%	83.33%	82.58%
Carbon Disulfide	ppbv	ND	ND	ND	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	60 J/J	ND	86 J/J	NC	NC	NC
2-Butanone (MEK)	ppbv	610	580	8,300	NC	NC	NC
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	490	420	22 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	**ppbv**	**56,608**	**55,678**	**12,727**	**77.14%**	**77.52%**	**77.33%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Qualifiers:
J - Result is estimated

Table 3
Catalytic Oxidizer (ME-106) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 4 - Sampled 6/28/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	ND	ND	180	NC	NC	NC
Vinyl Chloride	ppbv	3,900	4,600	440	88.72%	90.43%	89.58%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	2,000	2,300	170	91.50%	92.61%	92.05%
1,1-Dichloroethene	ppbv	25 J/J	29 J/J	32	NC	NC	NC
Methylene Chloride	ppbv	860	1,200	130	84.88%	89.17%	87.03%
1,1-Dichloroethane	ppbv	780	970	58	92.56%	94.02%	93.29%
cis-1,2-Dichloroethene	ppbv	7,700	10,000	810	89.48%	91.90%	90.69%
Chlororform	ppbv	12 J/J	13 J/J	1.2 J/J	NC	NC	NC
1,1,1-Trichloroethane	ppbv	340	410	15	95.59%	96.34%	95.96%
Carbon Tetrachloride	ppbv	ND	ND	ND	NC	NC	NC
Benzene	ppbv	14,000	17,000	1,700	87.86%	90.00%	88.93%
1,2-Dichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Trichloroethene	ppbv	68	89	8.4	87.65%	90.56%	89.10%
1,2-Dichloropropane	ppbv	60 J/J	87	4.5 J/J	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	7,600	12,000	640	91.58%	94.67%	93.12%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	31 J/J	31 J/J	6.9 J/J	NC	NC	NC
Chlorobenzene	ppbv	570	820	80	85.96%	90.24%	88.10%
Ethylbenzene	ppbv	1,600	2,300	93	94.19%	95.96%	95.07%
m,p-Xylene	ppbv	8,400	12,000	460	94.52%	96.17%	95.35%
o-Xylene	ppbv	2,200	3,300	130	94.09%	96.06%	95.08%
Styrene	ppbv	63 J/J	ND	22	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	350	400	48	86.29%	88.00%	87.14%
Carbon Disulfide	ppbv	ND	ND	7.2 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	54	NC	NC	NC
2-Butanone (MEK)	ppbv	200 J/J	240 J/J	32	NC	NC	NC
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	240 J/J	330	10 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	**ppbv**	**50,368**	**67,806**	**5,102**	**89.87%**	**92.48%**	**91.17%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Qualifiers:
J - Result is estimated

Table 4
Catalytic Oxidizer (ME-106) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 3 - Sampled 6/21/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND	1.2	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND	3.0	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	3.4	32	0.75 J/J	NC	NC	NC
1,2-Dichlorobenzene	µg	6.1	56	1.2	80.33%	98.57%	89.45%
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	ND	ND	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	0.66 J/J	7.1	ND	NC	NC	NC
Naphthalene	µg	2.8	27	ND	NC	NC	NC
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	1.4	15	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	0.37 J/J	0.43 J/J	0.34 J/J	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	ND	1.4 J/J	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND	ND	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	2.0 J/J	1.9 J/J	6.1	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	**14**	**141.30**	**7.30**	**46.72%**	**99.67%**	**86.35%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 4
Catalytic Oxidizer (ME-106) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 4 - Sampled 6/28/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	1.7	ND	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	2.7	ND	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	27	ND	1.5	94.44%	NC	NC
1,2-Dichlorobenzene	µg	46	ND	2.3	95.00%	NC	NC
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	ND	ND	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	6.2	ND	0.38 J/J	NC	NC	NC
Naphthalene	µg	13	ND	0.41 J/J	NC	NC	NC
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	6.9	ND	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	0.52 J/JB	ND	0.47 J/JB	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	1.2 J/J	ND	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND	ND	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	ND	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	103.50	0.00	3.80	96.33%	100.00%	98.16%

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 5.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-01	4/22/02	60	12	>50,000	
	4/23/02	61	24	NA	
	4/24/02	44	22	>50,000	
	5/15/02	44	22	>50,000	
	5/21/02	236	50	188	
	5/22/02	107	54	240	
	5/23/02	76	57	422	Testing Completed
SVE-02	5/15/02	44	24	>50,000	
	5/21/02	193	54	292	
	5/22/02	76	60	425	
	5/23/02	76	64	460	Testing Completed
SVE-03	6/7/02	0	68	193	
	6/10/02	63	39	Water	
	6/13/02	0	38	335	
	6/14/02	0	40	414	
	6/17/02	0	40	540	
	6/20/02	0	60	Water	
	6/21/02	0	64	Water	
	6/24/02	0	62	408	
	6/25/02	0	56	383	
	6/26/02	0	47	647	
	6/27/02	0	46	528	
SVE-04	6/7/02	Water	72	Water	
	6/10/02	0	49	215	Water
	6/13/02	0	47	0	
	6/14/02	0	48	0	
	6/17/02	0	49	0	
	6/20/02	0	71	Water	
	6/21/02	Water	72	Water	
	6/24/02	Water	72	Water	
	6/25/02	Water	64	Water	
	6/26/02	0	58	161	
	6/27/02	0	58	Water	
SVE-05	6/10/02	78	35	675	
	6/13/02	107	35	1210	
	6/14/02	88	38	920	Testing Completed
	6/17/02	108	37	1005	

Table 5.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-06	6/7/02	203	64	514	
	6/10/02	63	25	735	
	6/13/02	68	20	1138	
	6/14/02	76	22	1086	Testing Completed
	6/17/02	63	22	1030	
SVE-07	4/23/02	61	28	>50,000	
	4/24/02	44	26	>50,000	
	5/15/02	0	24	>50,000	
	5/21/02	Water	58	273	
	5/22/02	Water	64	1550	
	5/23/02	Water	70	Water	
	6/20/02	0	70	Water	
	6/21/02	Water	72	Water	
	6/24/02	Water	54	Water	
	6/25/02	Water	56	Water	
	6/26/02	Water	53	Water	
	6/27/02	0	52	Water	
SVE-08	5/15/02	56	2	>50,000	
	5/21/02	75	10	342	
	5/22/02	98	14	2190	
	5/23/02	76	15	402	Testing Completed
SVE-09	5/21/02	136	10	223	
	5/22/02	44	12	1150	
	5/23/02	44	12	362	
	6/7/02	365	64	639	
	6/10/02	63	14	421	
	6/13/02	62	10	156	
	6/14/02	62	12	381	Testing Completed
	6/17/02	44	11	585	
SVE-10	6/7/02	147	74	725	
	6/10/02	63	22	580	
	6/13/02	76	42	580	
	6/14/02	98	46	692	Testing Completed
	6/17/02	99	44	780	

Table 5.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-11	6/10/02	45	12	675	
	6/13/02	20	9	685	
	6/14/02	44	10	848	
	6/17/02	44	10	958	
	6/20/02	78	10	1160	
	6/21/02	89	4	-	
	6/24/02	20	8	834	
	6/25/02	63	8	501	
	6/26/02	56	8	585	Testing Completed
	6/27/02	44	6	675	
SVE-12	4/22/02	60	11	>50,000	
	4/23/02	61	26	>50,000	
	4/24/02	98	23	>50,000	
	5/15/02	56	4	1462	Testing Completed
SVE-13	6/7/02	0	80	890	
	6/10/02	0	42	811	
	6/13/02	0	42	920	
	6/14/02	0	46	1102	
	6/17/02	0	45	1120	
	6/20/02	0	70	1406	
	6/21/02	0	68	1005	
	6/24/02	0	68	1487	
	6/25/02	0	61	776	
	6/26/02	0	52	913	
	6/27/02	0	52	1071	
SVE-14	4/22/02	60	14	>50,000	
	4/23/02	57	26	>50,000	
	4/24/02	44	24	>50,000	
	5/15/02	63	24	6.10%	
	5/21/02	75	52	568	
	5/22/02	76	58	650	
	5/23/02	62	62	694	Testing Completed
SVE-15	6/20/02	284	25	1601	
	6/21/02	178	22	1074	
	6/24/02	205	24	1523	
	6/25/02	199	23	815	
	6/26/02	183	20	892	Testing Completed
	6/27/02	188	20	998	

Table 5.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-16	6/20/02	127	20	1530	
	6/21/02	109	20	985	
	6/24/02	101	18	1600	
	6/25/02	100	20	743	
	6/26/02	93	18	806	Testing Completed
	6/27/02	99	15	948	
SVE-17	6/7/02	44	74	371	
	6/10/02	45	40	460	
	6/13/02	44	40	862	
	6/14/02	44	42	546	Testing Completed
	6/17/02	44	42	645	
SVE-18	6/20/02	63	65	1405	
	6/21/02	-	64	Fluid	
	6/24/02	53	62	1570	
	6/25/02	63	56	782	
	6/26/02	44	48	910	Testing Completed
	6/27/02	140	38	1027	
SVE-19	5/15/02	88	22	>50,000	
	5/21/02	167	52	142	
	5/22/02	186	58	4650	
	5/23/02	207	62	218	Testing Completed
SVE-20	6/7/02	63	76	137	
	6/10/02	63	42	182	
	6/13/02	62	42	415	
	6/14/02	44	44	91	Testing Completed
	6/17/02	44	44	181	
SVE-21	6/10/02	63	12	106	
	6/13/02	62	12	443	
	6/14/02	62	14	71	Testing Completed
	6/17/02	63	15	236	
SVE-22	5/15/02	0	28	10.90%	
	5/21/02	0	58	350	
	6/20/02	0	62	434	
	6/21/02	0	62	385	
	6/24/02	0	62	1019	
	6/25/02	0	55	339	
	6/26/02	0	38	473	
	6/27/02	0	48	414	

Table 5.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-23	6/20/02	127	12	1536	
	6/21/02	99	12	1180	
	6/24/02	142	12	1650	
	6/25/02	140	14	892	Testing Completed
	6/27/02	125	12	1222	
SVE-24	4/24/02	76	24	>50,000	
	5/15/02	84	24	>50,000	
	5/21/02	96	58	764	
	5/22/02	116	60	660	
	5/23/02	62	12	1488	Testing Completed
SVE-25	5/15/02	77	2	6.20%	
	5/21/02	106	10	645	
	5/22/02	116	12	780	
	5/23/02	71	2	1312	Testing Completed
SVE-26	6/10/02	63	20	226	
	6/13/02	68	20	220	
	6/14/02	76	22	141	Testing Completed
	6/17/02	63	22	295	
SVE-27	4/24/02	0	25	>50,000	
	5/15/02	63	0	245	
	5/21/02	61	0	349	
	5/22/02	62	0	120	
	5/23/02	62	0	427	
	6/20/02	63	2	165	
	6/21/02	99	2	0	
	6/24/02	142	4	30	
	6/25/02	133	10	0	
	6/26/02	118	8	6	Testing Completed
	6/27/02	117	6	5	
SVE-28	6/7/02	44	70	164	
	6/10/02	45	39	325	
	6/13/02	0	39	155	
	6/14/02	0	42	262	
	6/17/02	0	41	288	
	6/20/02	45	64	310	
	6/21/02	63	64	128	
	6/24/02	45	62	161	Testing Completed
	6/25/02	0	58	0	
	6/26/02	0	48	196	
	6/27/02	0	48	205	

Table 5.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-29	6/10/02	45	30	610	
	6/13/02	20	30	777	
	6/14/02	44	34	840	Testing Completed
	6/17/02	44	32	923	
SVE-30	6/10/02	0	35	1097	
	6/13/02	0	35	1730	
	6/14/02	0	38	1171	
	6/17/02	0	38	1182	
	6/20/02	0	60	1575	
	6/21/02	0	60	1142	
	6/24/02	0	60	1550	
	6/25/02	0	52	670	
	6/26/02	0	46	930	
	6/27/02	0	44	651	
SVE-31	4/24/02	0	24	>50,000	
	5/15/02	0	22	>50,000	
	5/21/02	0	50	710	
	6/20/02	0	60	1138	
	6/21/02	0	58	965	
	6/24/02	0	60	1200	
	6/25/02	0	53	587	
	6/26/02	0	46	784	
	6/27/02	0	44	841	
SVE-32	5/15/02	84	14	8735	
	5/21/02	96	20	1007	
	5/22/02	98	22	740	
	5/23/02	Water	62	785	
	6/20/02	63	12	1154	
	6/21/02	63	12	1140	
	6/24/02	45	12	1350	
	6/25/02	172	38	900	
	6/26/02	154	40	1035	Testing Completed
	6/27/02	153	40	1180	
SVE-33	6/10/02	78	47	1174	
	6/13/02	62	39	1940	
	6/14/02	76	42	1400	Testing Completed
	6/17/02	77	39	1501	

Table 5.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-34	6/7/02	171	70	660	
	6/13/02	87	39	1800	
	6/14/02	88	42	903	
	6/17/02	88	41	904	
	6/20/02	63	42	1520	
	6/21/02	99	42	1185	
	6/24/02	78	42	1549	
	6/25/02	63	39	913	
	6/26/02	53	36	1034	Testing Completed
	6/27/02	44	36	1226	
SVE-35	6/10/02	0	39	1740	
	6/13/02	62	26	1600	
	6/14/02	62	28	1364	
	6/17/02	63	27	1478	
	6/20/02	63	25	1905	
	6/21/02	63	24	1463	
	6/24/02	45	24	1780	
	6/25/02	44	22	1163	
	6/26/02	40	22	1248	Testing Completed
	6/27/02	44	22	1440	
SVE-36	6/10/02	45	37	944	
	6/13/02	0	35	1640	
	6/14/02	0	40	1332	
	6/17/02	0	38	2619	
	6/20/02	0	60	1269	
	6/21/02	0	58	1149	
	6/24/02	0	58	1430	
	6/25/02	0	52	644	
	6/26/02	0	44	840	
	6/27/02	0	44	841	
SVE-37	5/15/02	84	28	1.50%	
	5/21/02	122	55	876	
	5/22/02	132	62	790	
	5/23/02	125	56	1493	Testing Completed
SVE-38	6/20/02	0	64	1372	
	6/21/02	0	62	872	
	6/24/02	0	62	1576	
	6/25/02	0	55	645	
	6/26/02	0	50	745	
	6/27/02	0	48	900	

Table 5.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)	Comments
SVE-39	6/10/02	78	11	996	
	6/13/02	70	8	1710	
	6/14/02	76	10	1166	Testing Completed
	6/17/02	77	10	1164	
SVE-40	6/10/02	63	13	898	
	6/13/02	70	10	1620	
	6/14/02	76	12	1065	Testing Completed
	6/17/02	77	11	1103	
SVE-41	6/10/02	78	10	993	
	6/13/02	68	8	1875	
	6/14/02	76	10	1226	Testing Completed
	6/17/02	77	11	1225	
SVE-42	5/15/02	0	-	1.80%	
	5/21/02	0	55	560	
	6/20/02	0	62	1478	
	6/21/02	44	62	1005	
	6/24/02	0	61	1407	
	6/25/02	0	55	758	
	6/26/02	0	48	866	
	6/27/02	0	48	1091	

Notes:
"-" = data not collected
"Water" - water present in vapor stream, preventing data collection

Table 2.2
Summary of Effluent Analytical Results - Second Quarter 2002
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 61 6/20/02	Effluent Limits	Lab Reporting
pH	7.13 /J	6-9	none
TSS	1.2	30	10
BOD	24	30	2
Arsenic	ND	50	3.4
Beryllium	ND	NE	0.2
Cadmium	ND	4.1	0.3
Manganese	24.5	NE	10
Mercury	ND	0.02 (w/DL = 0.64)	0.64
Selenium	ND	8.2	4.3
Thallium	ND	NE	5.7
Zinc	3.9 B/	411	1.2
Benzene	ND	5	0.5
Acetone	4 B/UBJ	6,800	3
2-Butanone	ND /UJ	210	3
Chloromethane	0.2 J/J	NE	0.5
1,4-Dichlorobenzene	ND	NE	0.5
1,1-Dichloroethane	ND	NE	0.5
cis-1,2-Dichloroethene	ND	70	0.5
Ethylbenzene	ND	34	0.5
Methylene chloride	1 B/UBJ	5	0.6
Tetrachloroethene	ND	5	0.5
Trichloroethene	ND	5	0.5
Vinyl chloride	ND	2	0.5
4-Methyl-2-pentanone	ND	15	3
bis (2-Chloroethyl) ether	ND	9.6	9.6
bis(2-Ethylhexyl) - phthalate	4 JB/UB	6	6
4 - Methylphenol	ND	34	10
Isophorone	ND	50	10
Pentachlorophenol	ND	1	1
PCB/Aroclor-1016	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	ND	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	ND /UJ	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	ND /UJ	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	ND /UJ	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	ND /UJ	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:

Data has been validated in accordance with the Project QAPP (November 2001) and the U.S. EPA National Functional Guidelines for Organic Data Review

Shaded cells indicate discharge exceedances

pH data is expressed in S.U.

TSS and BOD5 data is expressed in mg/L

Metals, VOC, SVOC and PCB data is expressed in ug/L

ND = Not detected

NE = No effluent limit established.

NA = Sample not analyzed for this compound

* = Approved SW-846 method is incapable of achieving effluent limit.

Suffix Definitions:

_/ = Data qualifier added by laboratory

/_ = Data qualifier added by data validator

B = Compound is also detected in the blank

E = Compound exceeds the upper level of calibration range of instrument

J = Result is detected below the reporting limit and is an estimated concentration

Q = Sample was analyzed out of the recommended holding time

R = Quality control indicates the data is not usable

JB = Analyte is detected in the compliance sample below the reporting limit and is an estimated concentration and the compound is also detected in the method blank resulting in a potential high bi

U = Analyte is not detected at or above the indicated concentration

UB = Analyte is not detected at or above the indicated concentration due to blank contamination

UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection limit i estimated value

D = Result obtained after diluting sample

MWH
MONTGOMERY WATSON HARZA

September 9, 2002

✓
KA
9/12/02

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Prabhakar Kasarabada
Project Manager
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: Progress Report – August 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Kasarabada:

This monthly progress report is for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of August 2002. The number and letter in parentheses at the end of each heading provides a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (OFCA) (2.a.)

ISVE Wells and Conveyance Piping

MWH has confirmed proper construction of the ISVE wells. No construction issues were noted on the ten wells that remained to be tested-out. The extraction and conveyance piping in the OFCA and Kapica Pazmey Area have been installed to meet the Final Remedial Design requirements. System monitoring results are attached in Table 1.

27755 Diehl Road
Suite 300
Warrenville, Illinois
60555

Tel: 630 836 8900
Fax: 630 836 8959

Thermal Oxidizer/Scrubber System

The thermal oxidizer scrubber unit was dismantled during the week of August 19 in response to symptoms of possible corrosion. Corrosion was observed inside the unit and ductwork, particularly on the quench nozzle. The packing material inside the unit was degraded and has been removed. Durr Engineering is reviewing their fabrication records to determine what may have caused the corrosion. Some parts of the unit were sent to the fabricator's shop during the week of August 26 to be repaired. The unit will be reassembled once the repairs have been made, and the system will be brought back on line as soon as possible.

Performance Standard Verification Plan (PSVP) Sampling

During July 2002, MWH completed the eight initial rounds of off-gas compliance sampling of both the thermal oxidizer unit (ISVE system) and the catalytic oxidizer unit (GWTP) as described in the Performance Standard Verification Plan (PSVP). These samples are used to determine the destruction efficiency of the units and compliance with discharge limits. The fifth, sixth, seventh, and eighth rounds were collected on July 2, 12, 18, and 25, respectively. Air Toxics Laboratories in Folsom, California analyzed the samples for volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC).

Analytical data from the samples collected on July 2, 12, 18, and 25, 2002 (Rounds 5 through 8) have been validated by MWH and are included in Tables 2, 3, 4, and 5 attached. The data indicate, as shown in Tables 6A and 6B, that both systems are operating within their permitted requirements of discharging less than three pounds of VOCs per day.

In accordance with the PSVP, the thermal oxidizer off-gas will be sampled monthly during operation. The thermal oxidizer was sampled on August 8, and results will be included in a future monthly progress report.

MWH is evaluating the need for future sampling of the catalytic oxidizer, in accordance with the procedures of the PSVP. While MWH evaluates the past analytical data, the catalytic oxidizer was also sampled on August 8.

ISVE System for Still Bottoms Pond Area (SBPA) (2.d.)

Boart Longyear, the subcontractor that installed the Off-Site Area ISVE wells during fall 2001, is expected to install the ISVE wells in the SBPA. A final scope document will be prepared to finalize the work activities and submitted to the U.S. EPA for information purposes. The SBPA well installation is expected to occur during October 2002.

Bids have been received for the installation of an additional thermal oxidizer unit for the SBPA ISVE system. MWH is reviewing the bids that have been received.

Interim Cover of On-Site Area (5.c.)

MWH has selected Hard Hat Services, Inc. (HHSI) to install the On-Site Area Interim Engineered Cover. HHSI is expected to deliver the required submittals to MWH during the

week of September 2 and is scheduled to mobilize to the Site the week of September 9, 2002. The field work for this task is planned to last four to six weeks.

Security Fencing began installing temporary fencing around the SBPA for this task on August 29. The fence installation will be completed during the week of September 2.

Final Cover of Off-Site Area (5.d.)
Environmental Contractors of Illinois (ECI), the subcontractor selected to install the Off-Site Area final engineered cover, mobilized to the Site beginning August 21. A kickoff health and safety and construction meeting was held on August 22.

ECI has begun to prepare the clay surface for liner installation by removing the erosion matting as well as weeds and rocks that might puncture the liner. Liner material began to arrive on site on August 29. ECI will construct and analyze the test pad and begin digging the anchor trench during the week of September 2. Duneland Surveyors have documented the existing contours of the liner area and delineated the liner extents.

Mid-America Lining, an ECI subcontractor, is scheduled to begin installing liner during the week of September 2. The task is scheduled to be completed during October.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate the participants. During August 2002, weekly construction meetings were held on the 1st, 8th, 22nd, and 29th. The minutes from each meeting were faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)
The Groundwater Treatment Plant (GWTP) continued to operate as designed during August 2002. The GWTP is currently treating 40 to 50 gallons per minute (gpm) of influent water. The On-Site Area Barrier Wall Extraction System (BWES), the Off-Site Area BWES, and the Perimeter Groundwater Containment System (PGCS) are currently bringing influent to the GWTP.

Extraction well EW-12 was temporarily taken off line while the manhole around the well was raised to a grade above the final cover in the Off-Site Area. The extraction well was brought back on line again during the week of August 5. The pump in extraction well

EW-19 was replaced during the week of August 26. The GWTP was shut down on August 19 while the catalytic oxidizer unit was repaired.

During the week of August 19, Ryan Construction began installing piping for a heat exchanger pump system in tank T-2 to receive heated water from the thermal oxidizer scrubber. Momper Insulation began insulating the activated sludge plant and aeration tank on August 26. The insulation process was completed on August 30. The insulation and the heat exchanger system are being installed to improve the treatment efficiency of the aeration tank and activated sludge plant during the winter months.

The July 2002 monthly effluent compliance sample for the GWTP was collected on July 30, 2002. However, the sample could not be analyzed because it arrived at the laboratory warm due to a shipping delay. The July 2002 sample, therefore, was resampled on August 8, 2002 and analytical results are attached in Table 2.2. No exceedences were reported.

Beginning with the August 2002 sample, MWH will be analyzing samples for VOCs and pH on a monthly frequency. MWH will analyze for BOD, TSS, SVOCs, Metals, and PCBs quarterly, in accordance with the PSVP. The August 2002 sample was collected on August 29 and is being analyzed for pH and VOCs. Results will be reported in the next monthly progress report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)
In March 2002, MWH submitted responses to Agency comments on the revised Long-Term Groundwater Monitoring Plan. The U.S. EPA approved the Plan on June 26, 2002. MWH will distribute copies of the approved Plan during September. The next groundwater monitoring event is scheduled for September 9-13, 2002.

Residential Well Water Quality Monitoring (B.8.)
The annual round of residential well sampling is scheduled for September 9-13, 2002.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to or approved by the U.S. EPA and IDEM.

Reports Being Prepared

- **Groundwater Plume Treatment (1.e.)** – a report summarizing the South Area Oxygen Release Compound (ORC®) Pilot Study is scheduled to be submitted to the Agencies. The report is currently undergoing client review and is expected to be submitted to the Agencies during September.

- **In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.) -** the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in October 2002.

- **Groundwater, Air Quality, Wetland, and Monitoring (B.7) –** the March 2002 Groundwater Monitoring Quarterly Report has been completed and will be submitted to the Agencies during September.

- **Treatment System Monitoring (B.1, 2, 3, 4) –** the Groundwater Treatment System Quarterly Monitoring Report – Fourth Quarter 2001 is scheduled to be submitted to the Agencies during September.

Reports Recently Submitted

- **Drum Removal in On-Site Containment Area (1.c.) –** the Construction Completion Report was submitted to the Agencies on August 12.

- **PCB Sediment Excavation from Wetland (1.d.)** - the Construction Completion Report was submitted to the Agencies on July 1.

- **Groundwater Treatment Plant Upgrade (3.a.)** – the as-built drawings were submitted to the Agencies on July 25, along with a brief summary of the construction upgrade process.

- **Barrier Wall Extraction System (BWES) Upgrades (3.b.)** – the Construction Completion Report was submitted to the Agencies on July 16.

The next monthly report will be forwarded to U.S. EPA and IDEM by October 10, 2002. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH

Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Updated Schedule of Remedial Activities
Table 1 – ISVE System Operation Data, OFCA and KP Area Systems
Table 2 – Thermal Oxidizer (ME-205) Results for Method TO-14 (VOCs)
Table 3 – Thermal Oxidizer (ME-205) Results for Method TO-13 (SVOCs)
Table 4 – Catalytic Oxidizer (ME-106) Results for Method TO-14 (VOCs)
Table 5 – Catalytic Oxidizer (ME-106) Results for Method TO-13 (SVOCs)
Table 6A – Influent and Effluent Mass Loading – Thermal Oxidizer (ME-205)
Table 6B – Influent and Effluent Mass Loading – Catalytic Oxidizer (ME-106)
Table 2.2 – Summary of Effluent Analytical Results – Third Quarter 2002

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Jim Vondracek - Ashland Chemical Company
Larry Campbell – Black & Veatch
Rob Adams – MWH
Peter Vagt – MWH
Travis Klingforth – MWH
FILE

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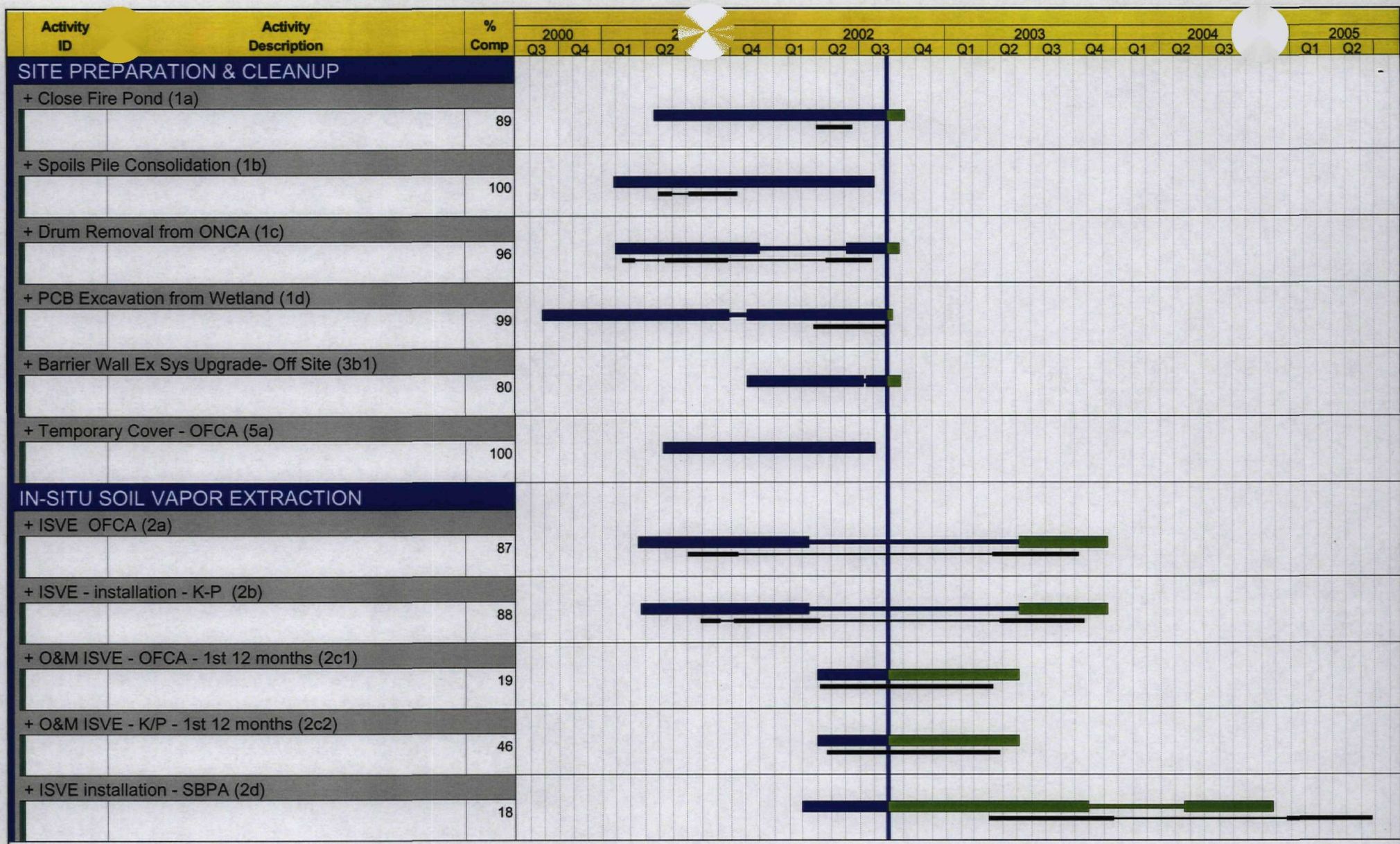

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Run Date 09SEP02 14:53

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of August 2002 Report

MWH
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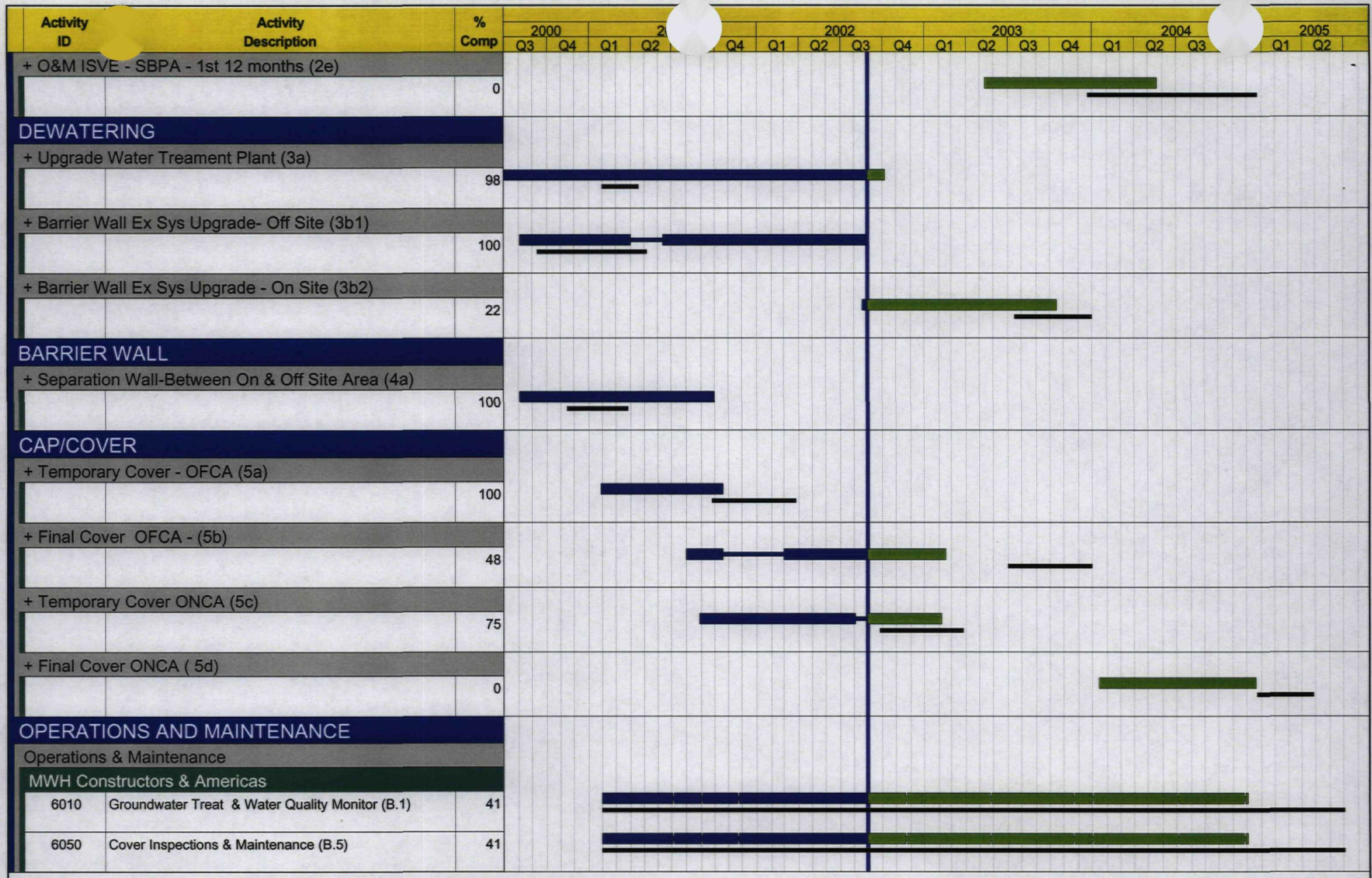

Data Date 30AUG02
Run Date 09SEP02 14:53

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

Sheet 2 of 3

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of August 2002 Report

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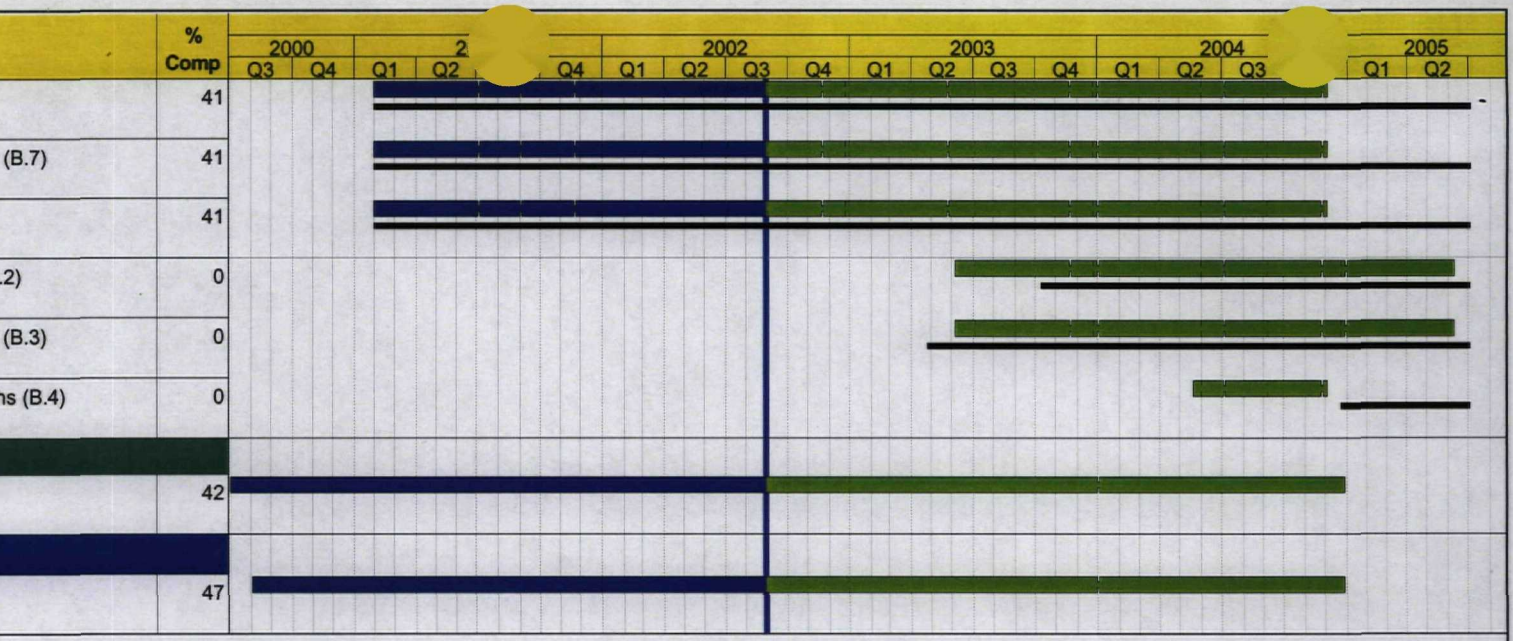
Activity ID	Activity Description	% Comp
6060	Monitored Natural Attenuation (B.6)	41
6070	Groundwater, Air & Wetland Monitoring (B.7)	41
6080	Residential Well Monitoring (B.8)	41
6020	OFCA SVE Sys O&M 1st 12 months (B.2)	0
6030	K/P Area SVE Sys O&M 1st 12 months (B.3)	0
6040	SBPA SVE Sys O&M after 1st 12 months (B.4)	0
+ MWH Americas		42
+ MANAGEMENT		47



Data Date 30AUG02
Run Date 09SEP02 14:53

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL Sheet 3 of 3

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of August 2002 Report

MWH
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Table 1.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)
SVE-01	8/2/02	108	50	560
	8/5/02	129	60	586
	8/6/02	139	58	725
	8/7/02	164	78	1185
	8/9/02	76	38	624
	8/12/02	78	41	871
	8/13/02	77	41	1109
SVE-02	8/9/02	44	34	464
	8/12/02	45	38	809
	8/13/02	44	38	775
SVE-03	8/2/02	0	50	296
	8/5/02	0	56	388
	8/6/02	0	54	575
	8/7/02	0	76	1.21%
SVE-04	8/2/02	77	12	330
	8/5/02	77	14	465
	8/6/02	76	10	386
	8/7/02	76	11	1.03%
SVE-07	8/2/02	77	32	118
	8/5/02	77	40	173
	8/6/02	76	38	164
	8/7/02	62	30	525
	8/9/02	62	28	242
	8/12/02	63	30	367
	8/13/02	63	32	399
SVE-08	8/9/02	62	18	334
	8/12/02	63	18	461
	8/13/02	63	20	365
SVE-12	8/9/02	62	20	521
	8/12/02	63	21	802
	8/13/02	63	22	1704
SVE-13	8/2/02	0	40	663
	8/5/02	0	48	642
	8/6/02	0	48	775
	8/7/02	0	66	855

Table 1.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)
SVE-14	8/9/02	0	34	749
	8/12/02	45	34	711
	8/13/02	44	36	831
SVE-15	8/9/02	62	0	838
	8/12/02	63	2	863
	8/13/02	63	2	838
SVE-16	8/2/02	77	8	619
	8/5/02	77	10	676
	8/6/02	76	8	813
	8/7/02	98	10	1639
SVE-18	8/2/02	99	44	645
	8/5/02	117	52	691
	8/6/02	116	52	794
	8/7/02	88	30	1765
	8/9/02	76	22	976
	8/12/02	63	26	864
	8/13/02	77	26	1071
SVE-19	8/9/02	76	10	332
	8/12/02	63	12	4519
	8/13/02	77	18	3575
SVE-22	8/2/02	99	8	712
	8/5/02	109	12	965
	8/6/02	108	12	774
	8/7/02	76	6	1423
	8/9/02	62	3	966
	8/12/02	63	2	853
	8/13/02	63	3	916
SVE-24	8/2/02	62	20	875
	8/5/02	83	26	1075
	8/6/02	88	24	836
	8/7/02	62	14	1632
	8/9/02	76	14	981
	8/12/02	63	16	820
	8/13/02	77	16	973

Table 1.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)
SVE-25	8/2/02	62	8	763
	8/5/02	83	10	900
	8/6/02	98	8	867
	8/7/02	76	4	1396
	8/9/02	76	4	1039
	8/12/02	63	2	870
	8/13/02	77	4	921
SVE-27	8/2/02	62	48	2550
	8/5/02	0	52	1.33%
	8/6/02	0	50	1324
	8/7/02	0	71	1.19%
	8/9/02	0	32	1015
	8/12/02	0	34	3124
	8/13/02	0	34	2064
SVE-28	8/2/02	62	42	160
	8/5/02	63	50	212
	8/6/02	62	48	235
	8/7/02	88	65	1445
SVE-30	8/2/02	44	44	766
	8/5/02	0	55	788
	8/6/02	0	56	923
	8/7/02	0	74	1191
SVE-31	8/2/02	44	48	697
	8/5/02	0	50	1228
	8/6/02	0	52	749
	8/7/02		68	4463
SVE-33	8/9/02	62	10	351
	8/12/02	63	12	1017
	8/13/02	63	12	1024
SVE-35	8/9/02	76	13	1222
	8/12/02	78	12	1287
	8/13/02	77	13	1155
SVE-36	8/2/02	44	44	570
	8/5/02	0	52	976
	8/6/02	0	52	645
	8/7/02	0	70	3448

Table 1.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)
SVE-37	8/9/02	62	28	892
	8/12/02	63	28	1187
	8/13/02	63	28	945
SVE-38	8/2/02	44	44	701
	8/5/02	77	52	1297
	8/6/02	98	52	816
	8/7/02	62	30	2582
SVE-41	8/9/02	62	3	488
	8/12/02	63	4	724
	8/13/02	63	4	896
SVE-42	8/2/02	44	42	625
	8/5/02	31	50	1057
	8/6/02	0	48	707
	8/7/02	44	68	2330
	8/8/02	44	65	-

Notes:
"-" = data not collected
"Water" - *water present in vapor stream, preventing data collection*

Table 2
Thermal Oxidizer (ME-205) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 5 - Sampled 7/2/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	9.4	NC	NC	NC
Vinyl Chloride	ppbv	7,200	ND	2.6	NC	99.96%	NC
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	ND	ND	ND	NC	NC	NC
1,1-Dichloroethene	ppbv	1,800 J/J	1,200 J/J	10	NC	NC	NC
Methylene Chloride	ppbv	260,000	220,000	13	99.99%	100.00%	99.99%
1,1-Dichloroethane	ppbv	79,000	68,000	2.5	100.00%	100.00%	100.00%
cis-1,2-Dichloroethene	ppbv	110,000	93,000	4.7	99.99%	100.00%	100.00%
Chlororform	ppbv	15,000	13,000	3.2	99.98%	99.98%	99.98%
1,1,1-Trichloroethane	ppbv	320,000	270,000	10	100.00%	100.00%	100.00%
Carbon Tetrachloride	ppbv	780 J/J	ND	4.3	NC	NC	NC
Benzene	ppbv	250,000	210,000	19	99.99%	99.99%	99.99%
1,2-Dichloroethane	ppbv	8,900	7,900	0.38 J/J	NC	NC	NC
Trichloroethene	ppbv	140,000	120,000	10	99.99%	99.99%	99.99%
1,2-Dichloropropane	ppbv	ND	ND	ND	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	0.63 J/J	NC	NC	NC
Toluene	ppbv	1,400,000	1,100,000	13	100.00%	100.00%	100.00%
trans-1,3-Dichloropropene	ppbv	ND	ND	0.40 J/J	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	110,000	93,000	9.1	99.99%	99.99%	99.99%
Chlorobenzene	ppbv	ND	ND	1.0 J/J	NC	NC	NC
Ethylbenzene	ppbv	110,000	78,000	0.57 J/J	NC	NC	NC
m,p-Xylene	ppbv	390,000	290,000	1.4 J/J	NC	NC	NC
o-Xylene	ppbv	110,000	80,000	0.53 J/J	NC	NC	NC
Styrene	ppbv	ND	2,900 J/J	0.35 J/J	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	130,000	120,000	18	99.99%	99.99%	99.99%
Carbon Disulfide	ppbv	2,400 J/J	2,200 J/J	6.9	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	1.5 J/J	NC	NC	NC
2-Butanone (MEK)	ppbv	180,000	150,000	300	99.80%	99.83%	99.82%
Bromodichloromethane	ppbv	ND	ND	0.58 J/J	NC	NC	NC
4-Methyl-2-pentanone	ppbv	88,000	68,000	ND	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	1.5 J/J	NC	NC	NC
Bromoform	ppbv	ND	ND	3.5 J/J	NC	NC	NC
Total	**ppbv**	**3,708,100**	**2,980,900**	**435.70**	**99.99%**	**99.99%**	**99.99%**

Table 2
Thermal Oxidizer (ME-205) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 6 - Sampled 7/12/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	7.7	NC	NC	NC
Vinyl Chloride	ppbv	6,000	5,900	2.6	99.96%	99.96%	99.96%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	3,600 J/J	4,100 J/J	ND	NC	NC	NC
1,1-Dichloroethene	ppbv	ND	ND	22	NC	NC	NC
Methylene Chloride	ppbv	350,000	340,000	35	99.99%	99.99%	99.99%
1,1-Dichloroethane	ppbv	80,000	78,000	4.0	99.99%	100.00%	99.99%
cis-1,2-Dichloroethene	ppbv	110,000	110,000	7.4	99.99%	99.99%	99.99%
Chlororform	ppbv	19,000	18,000	6.8	99.96%	99.96%	99.96%
1,1,1-Trichloroethane	ppbv	430,000	430,000	11	100.00%	100.00%	100.00%
Carbon Tetrachloride	ppbv	ND	ND	5.1	NC	NC	NC
Benzene	ppbv	340,000	340,000	31	99.99%	99.99%	99.99%
1,2-Dichloroethane	ppbv	10,000	10,000	ND	NC	NC	NC
Trichloroethene	ppbv	210,000	200,000	17	99.99%	99.99%	99.99%
1,2-Dichloropropane	ppbv	4,300 J/J	4,400 J/J	ND	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	0.78	NC	NC	NC
Toluene	ppbv	1,600,000	1,600,000	62	100.00%	100.00%	100.00%
trans-1,3-Dichloropropene	ppbv	ND	ND	0.57 J/J	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	150,000	150,000	15	99.99%	99.99%	99.99%
Chlorobenzene	ppbv	ND	ND	1.1	NC	NC	NC
Ethylbenzene	ppbv	150,000	150,000	3.8	100.00%	100.00%	100.00%
m,p-Xylene	ppbv	550,000	560,000	12	100.00%	100.00%	100.00%
o-Xylene	ppbv	160,000	150,000	3.5	100.00%	100.00%	100.00%
Styrene	ppbv	ND	ND	2.4	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	200,000	190,000	100	99.95%	99.95%	99.95%
Carbon Disulfide	ppbv	ND	ND	2.5 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	2.8 J/J	NC	NC	NC
2-Butanone (MEK)	ppbv	240,000	250,000	160	99.93%	99.94%	99.94%
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	110,000	110,000	8.4	99.99%	99.99%	99.99%
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	3.6	NC	NC	NC
Total	**ppbv**	**4,715,000**	**4,691,900**	**522.18**	**99.99%**	**99.99%**	**99.99%**

Table 2
Thermal Oxidizer (ME-205) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 7 - Sampled 7/18/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	6.4	NC	NC	NC
Vinyl Chloride	ppbv	2,100 J/J	3,500	2.6	NC	99.93%	NC
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	2,700 J/J	3,500	ND	NC	NC	NC
1,1-Dichloroethene	ppbv	ND	ND	11	NC	NC	NC
Methylene Chloride	ppbv	110,000	130,000	6.3	99.99%	100.00%	99.99%
1,1-Dichloroethane	ppbv	37,000	44,000	0.70 J/J	NC	NC	NC
cis-1,2-Dichloroethene	ppbv	35,000	46,000	2.8	99.99%	99.99%	99.99%
Chlororform	ppbv	5,300	6,500	1.2	99.98%	99.98%	99.98%
1,1,1-Trichloroethane	ppbv	110,000	140,000	1.2	100.00%	100.00%	100.00%
Carbon Tetrachloride	ppbv	ND	ND	1.3	NC	NC	NC
Benzene	ppbv	110,000	130,000	7.0	99.99%	99.99%	99.99%
1,2-Dichloroethane	ppbv	3,800	4,900	ND	NC	NC	NC
Trichloroethene	ppbv	79,000	94,000	5.2	99.99%	99.99%	99.99%
1,2-Dichloropropane	*ppbv*	*ND*	*ND*	*ND*	*NC*	*NC*	*NC*
cis-1,3-Dichloropropene	ppbv	ND	ND	0.16 J/J	NC	NC	NC
Toluene	ppbv	770,000	910,000	4.4	100.00%	100.00%	100.00%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	700 J/J	ND	NC	NC	NC
Tetrachloroethene	ppbv	66,000	79,000	6.7	99.99%	99.99%	99.99%
Chlorobenzene	ppbv	200 J/J	360 J/J	0.91	NC	NC	NC
Ethylbenzene	ppbv	53,000	62,000	0.26 J/J	NC	NC	NC
m,p-Xylene	ppbv	200,000	230,000	0.71 J/J	NC	NC	NC
o-Xylene	ppbv	55,000	63,000	0.26 J/J	NC	NC	NC
Styrene	ppbv	ND	ND	0.94	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	130,000	170,000	61	99.95%	99.96%	99.96%
Carbon Disulfide	ppbv	ND	ND	8.3	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	1.0 J/J	NC	NC	NC
2-Butanone (MEK)	ppbv	150,000	200,000	37	99.98%	99.98%	99.98%
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	70,000	86,000	2.0 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	1.3 J/J	NC	NC	NC
Total	**ppbv**	**1,984,100**	**2,402,400**	**164.25**	**99.99%**	**99.99%**	**99.99%**

Table 2
Thermal Oxidizer (ME-205) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 8 - Sampled 7/25/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	6.6	NC	NC	NC
Vinyl Chloride	ppbv	ND	ND	2.8	NC	NC	NC
Bromomethane	ppbv	ND	ND	0.43 J/J	NC	NC	NC
Chloroethane	ppbv	ND	1,800 J/J	ND	NC	NC	NC
1,1-Dichloroethene	ppbv	800 J/J	820 J/J	12	NC	NC	NC
Methylene Chloride	ppbv	180,000	190,000	13	99.99%	99.99%	99.99%
1,1-Dichloroethane	ppbv	42,000	46,000	1.5	100.00%	100.00%	100.00%
cis-1,2-Dichloroethene	ppbv	50,000	54,000	3.6	99.99%	99.99%	99.99%
Chlororform	ppbv	7,200	7,800	3.6	99.95%	99.95%	99.95%
1,1,1-Trichloroethane	ppbv	190,000	200,000	5.6	100.00%	100.00%	100.00%
Carbon Tetrachloride	ppbv	ND	ND	2.7	NC	NC	NC
Benzene	ppbv	230,000	240,000	22	99.99%	99.99%	99.99%
1,2-Dichloroethane	ppbv	4,300 J/J	4,600 J/J	ND	NC	NC	NC
Trichloroethene	ppbv	120,000	120,000	10	99.99%	99.99%	99.99%
1,2-Dichloropropane	ppbv	1,900 J/J	1,600 J/J	ND	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	0.42 J/J	NC	NC	NC
Toluene	ppbv	1,000,000	1,100,000	15	100.00%	100.00%	100.00%
trans-1,3-Dichloropropene	ppbv	ND	ND	0.33 J/J	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	110,000	120,000	11	99.99%	99.99%	99.99%
Chlorobenzene	ppbv	ND	ND	0.90	NC	NC	NC
Ethylbenzene	ppbv	88,000	97,000	0.87	100.00%	100.00%	100.00%
m,p-Xylene	ppbv	300,000	330,000	2.8	100.00%	100.00%	100.00%
o-Xylene	ppbv	81,000	90,000	0.90	100.00%	100.00%	100.00%
Styrene	ppbv	ND	ND	1.8	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	120,000	130,000	55	99.95%	99.96%	99.96%
Carbon Disulfide	ppbv	ND	2,100 J/J	1.2 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	1.6 J/J	NC	NC	NC
2-Butanone (MEK)	ppbv	160,000	180,000	20	99.99%	99.99%	99.99%
Bromodichloromethane	ppbv	ND	ND	0.36 J/J	NC	NC	NC
4-Methyl-2-pentanone	ppbv	53,000	58,000	0.65 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	ppbv	2,731,200	2,962,800	191.67	99.99%	99.99%	99.99%

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume

Qualifiers:
J - Result is estimated
JB - Analyte detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 3
Thermal Oxidizer (ME-205) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 5 - Sampled 7/2/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	5.4 /J	7.0 /J	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	64 /J	82 /J	ND	NC	NC	NC
2-Methylphenol (o-Cresol)	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachloroethane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Nitrobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Isophorone	µg	35 /J	46 /J	ND	NC	NC	NC
2-Nitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	2.1 /J	3.0 /J	ND	NC	NC	NC
Naphthalene	µg	43 /J	57 /J	ND	NC	NC	NC
4-Chloroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachlorobutadiene	µg	0.56 J/J	0.68 J/J	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Methylnaphthalene	µg	6.0 /J	7.8 /J	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dimethylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
3-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenzofuran	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Diethylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Fluorene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pentachlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Phenanthrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
di-n-Butylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Chrysene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Total	µg	NC	NC	NC	NC	NC	NC

Table 3
Thermal Oxidizer (ME-205) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

Compounds		Round 6 - Sampled 7/12/02					
		Analytical Data			Destruction Efficiency		
Method TO-13	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Phenol	µg	ND /UJ	15 /J	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	9.3 /J	9.3 /J	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	120 /J	120 /J	ND	NC	NC	NC
2-Methylphenol (o-Cresol)	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachloroethane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Nitrobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Isophorone	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Nitrophenol	µg	63 /J	ND /UJ	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND /UJ	62 /J	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Naphthalene	µg	4.1 /J	ND /UJ	ND	NC	NC	NC
4-Chloroaniline	µg	59 /J	4.7 /J	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND /UJ	64 /J	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	0.84 J/J	ND /UJ	ND	NC	NC	NC
2-Methylnaphthalene	µg	ND /UJ	0.91 J/J	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	9.1 /J	ND /UJ	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND /UJ	10 /J	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dimethylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
3-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenzofuran	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Diethylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Fluorene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitroaniline	µg	ND /UJ	0.31 J/J	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pentachlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Phenanthrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
di-n-Butylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Chrysene	µg	0.34 J/JB	ND /UJ	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND /UJ	ND /UJ	0.36 J/JB	NC	NC	NC
Di-n-Octylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Total	µg	NC	NC	NC	NC	NC	NC

Table 3
Thermal Oxidizer (ME-205) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 7 - Sampled 7/18/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	18 /J	17 /J	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	6.7 /J	5.9 /J	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	94 /J	87 /J	ND	NC	NC	NC
2-Methylphenol (o-Cresol)	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Methylphenol	µg	12 /J	12 /J	ND	NC	NC	NC
Hexachloroethane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Nitrobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Isophorone	µg	68 /J	62 /J	ND	NC	NC	NC
2-Nitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dimethylphenol	µg	3.4 J/J	3.3 J/J	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	4.4 /J	4.1 /J	ND	NC	NC	NC
Naphthalene	µg	41 /J	39 /J	ND	NC	NC	NC
4-Chloroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Methylnaphthalene	µg	6.9 /J	6.3 /J	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dimethylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
3-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Acenaphthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitrophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenzofuran	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Diethylphthalate	µg	0.43 J/JB	0.37 J/JB	0.41 J/JB	NC	NC	NC
Fluorene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Nitroaniline	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Hexachlorobenzene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pentachlorophenol	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Phenanthrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
di-n-Butylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Butylbenzylphthalate	µg	0.41 J/JB	0.26 J/JB	0.31 J/JB	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Chrysene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND /UJ	ND /UJ	ND	NC	NC	NC
Total	µg	NC	NC	NC	NC	NC	NC

Table 3
Thermal Oxidizer (ME-205) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 8 - Sampled 7/25/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND	ND	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND	ND	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	ND	ND	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	15	35	ND	100.00%	100.00%	100.00%
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	5.5	14	ND	100.00%	100.00%	100.00%
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-Dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	ND	0.60 J/J	ND	NC	NC	NC
Naphthalene	µg	5.8	18	ND	100.00%	100.00%	100.00%
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	1.2	ND	NC	100.00%	100.00%
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	0.84 J/J	2.8	ND	NC	100.00%	100.00%
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	ND	0.33 J/JB	0.35 J/JB	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	0.58 J/JB	0.67 J/JB	0.63 J/JB	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	0.45 J/JB	0.41 J/JB	0.40 J/JB	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	ND	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	**26.30**	**71.00**	**ND**	**100.00%**	**100.00%**	**100.00%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 4
Catalytic Oxidizer (ME-106) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 5 - Sampled 7/2/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	ND	ND	67	NC	NC	NC
Vinyl Chloride	ppbv	2,200	2,700	160	92.73%	94.07%	93.40%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	1,200	1,400	85	92.92%	93.93%	93.42%
1,1-Dichloroethene	ppbv	14 J/J	16 J/J	10	NC	NC	NC
Methylene Chloride	ppbv	290	440	50	82.76%	88.64%	85.70%
1,1-Dichloroethane	ppbv	340	510	20	94.12%	96.08%	95.10%
cis-1,2-Dichloroethene	ppbv	3,900	5,000	320	91.79%	93.60%	92.70%
Chlororform	ppbv	5.6 J/J	7.0 J/J	0.64 J/J	NC	NC	NC
1,1,1-Trichloroethane	ppbv	160	240	5.7	96.44%	97.63%	97.03%
Carbon Tetrachloride	ppbv	ND	ND	ND	NC	NC	NC
Benzene	ppbv	7,000	9,300	690	90.14%	92.58%	91.36%
1,2-Dichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Trichloroethene	ppbv	32	51	2.4 J/J	NC	NC	NC
1,2-Dichloropropane	ppbv	40	42	2.2 J/J	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	4,100	5,400	310	92.44%	94.26%	93.35%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	7.1 J/J	8.1 J/J	0.93 J/J	NC	NC	NC
Tetrachloroethene	ppbv	16 J/J	23 J/J	1.8 J/J	NC	NC	NC
Chlorobenzene	ppbv	240	330	21	91.25%	93.64%	92.44%
Ethylbenzene	ppbv	700	960	28	96.00%	97.08%	96.54%
m,p-Xylene	ppbv	3,400	5,000	160	95.29%	96.80%	96.05%
o-Xylene	ppbv	1,100	1,400	54	95.09%	96.14%	95.62%
Styrene	ppbv	36	ND	15	NC	58.33%	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	0.74 J/J	NC	NC	NC
Acetone	ppbv	500	380	72	85.60%	81.05%	83.33%
Carbon Disulfide	ppbv	ND	ND	2.4 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	15	NC	NC	NC
2-Butanone (MEK)	ppbv	32 J/J	31 J/J	30	NC	NC	NC
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	200	150	10 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	ppbv	24,198	33,303	2,113	91.27%	93.66%	92.46%

Table 4
Catalytic Oxidizer (ME-106) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 6 - Sampled 7/12/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	1.9	2.3	1.4	26.32%	39.13%	32.72%
Vinyl Chloride	ppbv	63	23	4.2	81.74%	93.33%	87.54%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	44	16	2.6	83.75%	94.09%	88.92%
1,1-Dichloroethene	ppbv	1.1 J/J	ND	1.4	NC	NC	NC
Methylene Chloride	ppbv	170	92	19	79.35%	88.82%	84.09%
1,1-Dichloroethane	ppbv	37	15	1.5	90.00%	95.95%	92.97%
cis-1,2-Dichloroethene	ppbv	220	100	14	86.00%	93.64%	89.82%
Chlororform	ppbv	3.1	1.5	0.39 J/J	NC	NC	NC
1,1,1-Trichloroethane	ppbv	28	8.8	0.88	90.00%	96.86%	93.43%
Carbon Tetrachloride	ppbv	ND	ND	ND	NC	NC	NC
Benzene	ppbv	180	66	20	69.70%	88.89%	79.29%
1,2-Dichloroethane	ppbv	6.5	4.2	ND	100.00%	100.00%	100.00%
Trichloroethene	ppbv	5.3	2.1	ND	100.00%	100.00%	100.00%
1,2-Dichloropropane	ppbv	2.5	1.2 J/J	ND	NC	100.00%	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	160	68	11	83.82%	93.13%	88.47%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	1.2 J/J	0.97 J/J	ND	NC	NC	NC
Tetrachloroethene	ppbv	1.4 J/J	ND	ND	NC	NC	NC
Chlorobenzene	ppbv	12	5.8	1.4	75.86%	88.33%	82.10%
Ethylbenzene	ppbv	43	17	2.2	87.06%	94.88%	90.97%
m,p-Xylene	ppbv	140	61	8.4	86.23%	94.00%	90.11%
o-Xylene	ppbv	56	22	2.5	88.64%	95.54%	92.09%
Styrene	ppbv	ND	ND	0.68 J/J	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	1.6 J/J	1.3	ND	NC	100.00%	NC
Acetone	ppbv	520	440	40	90.91%	92.31%	91.61%
Carbon Disulfide	ppbv	8.3	2.1 J/J	4.5	NC	45.78%	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	1.0 J/J	NC	NC	NC
2-Butanone (MEK)	ppbv	210	94	17	81.91%	91.90%	86.91%
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	150	98	2.2 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	**ppbv**	**2,061**	**1,138**	**152**	**92.62%**	**86.64%**	**89.63%**

Table 4
Catalytic Oxidizer (ME-106) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 7 - Sampled 7/18/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	ND	ND	36	NC	NC	NC
Vinyl Chloride	ppbv	940	590	130	77.97%	86.17%	82.07%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	600	380	53	86.05%	91.17%	88.61%
1,1-Dichloroethene	ppbv	7.3 J/J	ND	15	NC	NC	NC
Methylene Chloride	ppbv	1,200	1,000	170	83.00%	85.83%	84.42%
1,1-Dichloroethane	ppbv	470	340	39	88.53%	91.70%	90.12%
cis-1,2-Dichloroethene	ppbv	6,600	5,100	600	88.24%	90.91%	89.57%
Chlororform	ppbv	7.4 J/J	5.7 J/J	1.1 J/J	NC	NC	NC
1,1,1-Trichloroethane	ppbv	110	68	7.4	89.12%	93.27%	91.20%
Carbon Tetrachloride	ppbv	ND	ND	ND	NC	NC	NC
Benzene	ppbv	3,400	2,000	440	78.00%	87.06%	82.53%
1,2-Dichloroethane	ppbv	98	71	6.2	91.27%	93.67%	92.47%
Trichloroethene	ppbv	40	24 J/J	4.8	NC	88.00%	NC
1,2-Dichloropropane	ppbv	64	50	4.4	91.20%	93.13%	92.16%
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	3,000	1,900	250	86.84%	91.67%	89.25%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	7.6 J/J	6.8 J/J	0.86 J/J	NC	NC	NC
Tetrachloroethene	ppbv	14 J/J	7.4 J/J	3.0	NC	NC	NC
Chlorobenzene	ppbv	220	140	33	76.43%	85.00%	80.71%
Ethylbenzene	ppbv	780	500	47	90.60%	93.97%	92.29%
m,p-Xylene	ppbv	4,200	2,800	220	92.14%	94.76%	93.45%
o-Xylene	ppbv	1,500	1,100	82	92.55%	94.53%	93.54%
Styrene	ppbv	ND	ND	22	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	0.65 J/J	NC	NC	NC
Acetone	ppbv	490	520	52	89.39%	90.00%	89.70%
Carbon Disulfide	ppbv	ND	ND	2.8 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	34 J/J	20 J/J	68	NC	NC	NC
2-Butanone (MEK)	ppbv	160	160	8.8 J/J	NC	NC	NC
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	260	270	9.5 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	ppbv	24,132	16,989	2,283	90.54%	86.56%	88.55%

Table 4
Catalytic Oxidizer (ME-106) Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 8 - Sampled 7/25/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	ND	ND	150	NC	NC	NC
Vinyl Chloride	ppbv	3,600	5,300	450	87.50%	91.51%	89.50%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	1,600	2,300	220	86.25%	90.43%	88.34%
1,1-Dichloroethene	ppbv	19 J/J	27 J/J	38	NC	NC	NC
Methylene Chloride	ppbv	1,100	1,600	280	74.55%	82.50%	78.52%
1,1-Dichloroethane	ppbv	550	820	73	86.73%	91.10%	88.91%
cis-1,2-Dichloroethene	ppbv	6,800	9,900	1,200	82.35%	87.88%	85.12%
Chlororform	ppbv	10 J/J	14 J/J	1.6 J/J	NC	NC	NC
1,1,1-Trichloroethane	ppbv	220	330	20	90.91%	93.94%	92.42%
Carbon Tetrachloride	ppbv	ND	ND	ND	NC	NC	NC
Benzene	ppbv	6,200	9,100	1,300	79.03%	85.71%	82.37%
1,2-Dichloroethane	ppbv	49	56	9.2	81.22%	83.57%	82.40%
Trichloroethene	ppbv	60	90	14	76.67%	84.44%	80.56%
1,2-Dichloropropane	ppbv	52	81	6.5	87.50%	91.98%	89.74%
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	4,700	6,700	670	85.74%	90.00%	87.87%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	9.4 J/J	ND	NC	NC	NC
Tetrachloroethene	ppbv	23 J/J	34	11	NC	67.65%	NC
Chlorobenzene	ppbv	250	380	66	73.60%	82.63%	78.12%
Ethylbenzene	ppbv	1,100	1,700	130	88.18%	92.35%	90.27%
m,p-Xylene	ppbv	5,400	7,900	600	88.89%	92.41%	90.65%
o-Xylene	ppbv	1,700	2,500	180	89.41%	92.80%	91.11%
Styrene	ppbv	ND	ND	38	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	210	330	53	74.76%	83.94%	79.35%
Carbon Disulfide	ppbv	ND	ND	ND	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	52 J/J	71 J/J	120	NC	NC	NC
2-Butanone (MEK)	ppbv	110 J/J	170	21 J/J	NC	NC	NC
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	160	260	14 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	**ppbv**	**33,751**	**49,551**	**5,629**	**83.32%**	**88.64%**	**85.98%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Qualifiers:
J - Result is estimated

Table 5
Catalytic Oxidizer (ME-106) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 5 - Sampled 7/2/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	0.72 J/J	0.97 J/J	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	0.49 J/J	1.1	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	5.6	12	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	9.9	18	ND	NC	NC	NC
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	ND	ND	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	1.3	2.3	ND	NC	NC	NC
Naphthalene	µg	1.6	3.4	ND	NC	NC	NC
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	1.2	1.9	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	ND	ND	ND	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	0.79 J/J	0.87 J/J	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	ND	ND	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	ND	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	**19.60**	**38.70**	**0.00**	**100.00%**	**100.00%**	**100.00%**

Table 5
Catalytic Oxidizer (ME-106) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 6 - Sampled 7/12/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	2.0	1.7	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND	ND	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	0.63 J/J	ND	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	0.82 J/J	ND	ND	NC	NC	NC
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	ND	ND	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	ND	ND	ND	NC	NC	NC
Naphthalene	µg	0.36 J/J	ND	ND	NC	NC	NC
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	0.53 J/J	ND	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	ND	ND	0.32 J/J	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	0.61 J/J	ND	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	0.33 J/JB	0.41 J/JB	0.54 J/JB	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	ND	3.0 J/J	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	2.0	1.7	0.00	100.00%	100.00%	100.00%

Table 5
Catalytic Oxidizer (ME-106) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 7 - Sampled 7/18/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND /UJ	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND	ND /UJ	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	0.82 J/J	ND /UJ	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	9.3	3.1 /J	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	16	5.5 /J	ND	NC	NC	NC
2-Methylphenol (o-Cresol)	µg	ND	ND /UJ	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND /UJ	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND /UJ	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND /UJ	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND /UJ	ND	NC	NC	NC
Isophorone	µg	ND	ND /UJ	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND /UJ	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND /UJ	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND /UJ	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	1.9	0.67 J/J	ND	NC	NC	NC
Naphthalene	µg	3.4	1.1 /J	ND	NC	NC	NC
4-Chloroaniline	µg	ND	ND /UJ	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND /UJ	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND /UJ	ND	NC	NC	NC
2-Methylnaphthalene	µg	1.6	0.54 J/J	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND	ND /UJ	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND /UJ	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND /UJ	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND /UJ	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND /UJ	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND /UJ	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND /UJ	ND	NC	NC	NC
Acenaphthene	µg	ND	ND /UJ	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND /UJ	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND /UJ	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND /UJ	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND /UJ	ND	NC	NC	NC
Diethylphthalate	µg	0.36 J/JB	0.32 J/JB	0.37 J/JB	NC	NC	NC
Fluorene	µg	ND	ND /UJ	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND /UJ	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND /UJ	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND /UJ	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND	ND /UJ	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND /UJ	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND /UJ	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND /UJ	ND	NC	NC	NC
Phenanthrene	µg	ND	ND /UJ	ND	NC	NC	NC
Anthracene	µg	ND	ND /UJ	ND	NC	NC	NC
di-n-Butylphthalate	µg	0.60 J/JB	ND /UJ	0.42 J/JB	NC	NC	NC
Fluoranthene	µg	ND	ND /UJ	ND	NC	NC	NC
Pyrene	µg	ND	ND /UJ	ND	NC	NC	NC
Butylbenzylphthalate	µg	0.88 J/JB	0.96 J/JB	1.6 J/JB	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND /UJ	ND	NC	NC	NC
Chrysene	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND /UJ	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	3.4 J/J	4.2 J/J	7.5	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND /UJ	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND /UJ	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND /UJ	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND /UJ	ND	NC	NC	NC
Total	µg	32.20	0.00	7.5	76.71%	100.00%	88.35%

Table 5
Catalytic Oxidizer (ME-106) Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 8 - Sampled 7/25/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND	ND	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	1.1	1.4	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	12	15	ND	NC	NC	NC
1,2-Dichlorobenzene	µg	20	25	0.62 J/J	NC	NC	NC
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	ND	ND	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	2.2	2.7	ND	NC	NC	NC
Naphthalene	µg	1.9	2.5	ND	NC	NC	NC
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	1.1	1.5	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	0.38 J/JB	0.39 J/JB	0.43 J/JB	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	0.66 J/JB	0.77 J/JB	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	0.43 J/JB	0.45 J/JB	0.30 J/JB	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	ND	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	38.30	48.10	0.00	100.00%	100.00%	100.00%

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Qualifiers:
J - Result is estimated
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Table 6A
Influent and Effluent Mass Loading
Thermal Oxidizer (ME-205)
American Chemical Service, Griffith, Indiana

		Total VOCs					
Round	**Date**	**Influent IN1**		**Influent IN2**		**Effluent EF1**	
		(ppbv)	(lb/hr)	(ppbv)	(lb/hr)	(ppbv)	(lb/hr)
Round 1	4/26/2002	763,910	12.069	60,335	0.900	17	0.000
Round 2	5/22/2002	3,793,000	53.180	4,416,300	62.109	43	0.000
Round 3	6/21/2002	3,411,300	40.022	3,342,600	39.903	30	0.003
Round 4	6/28/2002	3,935,200	55.421	4,439,200	62.301	2	0.001
Round 5	7/2/2002	3,713,080	48.915	2,987,200	39.317	25	0.004
Round 6	7/12/2002	4,722,900	62.468	4,700,400	62.165	69	0.005
Round 7	7/18/2002	1,989,100	25.786	2,403,460	31.070	11	0.002
Round 8	7/25/2002	2,738,200	35.824	2,973,720	38.838	20	0.002

Note: Estimated values included in the analytical data were used in the calculation of Total VOCs. Therefore, these calculated values for mass loading are conservative and ensure the effluent data (worst-case) meets discharge requirements.

Table 6B
Influent and Effluent Mass Loading
Catalytic Oxidizer (ME-106)
American Chemical Service, Griffith, Indiana

		Total VOCs					
Round	**Date**	**Influent IN1**		**Influent IN2**		**Effluent EF1**	
		(ppbv)	(lb/hr)	(ppbv)	(lb/hr)	(ppbv)	(lb/hr)
Round 1	4/26/2002	58,102	0.326	421,280	2.544	5,554	0.030
Round 2	5/22/2002	12,878	0.071	11,001	0.061	1,011	0.005
Round 3	6/21/2002	56,793	0.255	55,778	0.250	12,917	0.049
Round 4	6/28/2002	50,999	0.241	68,119	0.326	5,132	0.023
Round 5	7/2/2002	25,513	0.116	33,388	0.152	2,134	0.009
Round 6	7/12/2002	2,066	0.009	1,142	0.005	156	0.001
Round 7	7/18/2002	24,202	0.099	17,053	0.070	2,307	0.009
Round 8	7/25/2002	33,965	0.128	49,672	0.188	5,666	0.021

Note: Estimated values included in the analytical data were used in the calculation of Total VOCs. Therefore, these calculated values for mass loading are conservative and ensure the effluent data (worst-case) meets discharge requirements.

Table 2.2
Summary of Effluent Analytical Results - Third Quarter 2002
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 62 8/8/02[1]	Effluent Limits	Lab Reporting
pH	7.51	6-9	none
TSS	ND	30	10
BOD	ND	30	2
Arsenic	3.2 B/	50	3.4
Beryllium	ND	NE	0.2
Cadmium	ND	4.1	0.3
Manganese	5.8 B/	NE	10
Mercury	ND	0.02 (w/DL = 0.64)	0.64
Selenium	ND	8.2	4.3
Thallium	ND	NE	5.7
Zinc	ND	411	1.2
Benzene	ND	5	0.5
Acetone	2 JB/	6,800	3
2-Butanone	ND	210	3
Chloromethane	ND	NE	0.5
1,4-Dichlorobenzene	ND	NE	0.5
1,1-Dichloroethane	ND	NE	0.5
cis-1,2-Dichloroethene	ND	70	0.5
Ethylbenzene	ND	34	0.5
Methylene chloride	2	5	0.6
Tetrachloroethene	ND	5	0.5
Trichloroethene	ND	5	0.5
Vinyl chloride	ND	2	0.5
4-Methyl-2-pentanone	ND	15	3
bis (2-Chloroethyl) ether	ND	9.6	9.6
bis(2-Ethylhexyl) - phthalate	0.76 J/	6	6
4 - Methylphenol	ND	34	10
Isophorone	ND	50	10
Pentachlorophenol	ND	1	1
PCB/Aroclor-1016	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	ND	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:

1. The July 30, 2002 sample could not be analyzed due because it arrived warm to the laboratory due to a shipping delay. It was resampled on August 8, 2002.

Data has not yet been validated in accordance with the Project QAPP (November 2001) and the U.S. I National Functional Guidelines for Organic Data Review

Shaded cells indicate discharge exceedances

pH data is expressed in S.U.

TSS and BOD5 data is expressed in mg/L

Metals, VOC, SVOC and PCB data is expressed in ug/L

ND = Not detected

NE = No effluent limit established.

NA = Sample not analyzed for this compound

* = Approved SW-846 method is incapable of achieving effluent limit.

Suffix Definitions:

_/ = Data qualifier added by laboratory

/_ = Data qualifier added by data validator

B = Compound is also detected in the blank

E = Compound exceeds the upper level of calibration range of instrument

J = Result is detected below the reporting limit and is an estimated concentration

Q = Sample was analyzed out of the recommended holding time

R = Quality control indicates the data is not usable

JB = Analyte is detected in the compliance sample below the reporting limit and is an estimated concentration and the compound is also detected in the method blank resulting in a potential high

U = Analyte is not detected at or above the indicated concentration

UB = Analyte is not detected at or above the indicated concentration due to blank contamination

UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection limi estimated value

D = Result obtained after diluting sample

MWH
MONTGOMERY WATSON HARZA

October 9, 2002

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Prabhakar Kasarabada
Project Manager
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: Progress Report – September 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Kasarabada:

This monthly progress report is for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of September 2002. The number and letter in parentheses at the end of each heading provides a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (OFCA) (2.a.)

ISVE Wells and Conveyance Piping and Thermal Oxidizer/Scrubber System

The thermal oxidizer scrubber unit was dismantled during the week of August 19 in response to symptoms of possible corrosion. The ISVE system remained shut down for maintenance and repairs during most of September. The unit was cleaned and several components were repaired.

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Suite 300
Warrenville, Illinois
60555

Tel: 630 836 8900
Fax: 630 836 8959

Replacement ductwork was fabricated and Ryan Construction began rebuilding the unit during the week of September 9. Vidimus, a mechanical contractor, welded together the scrubber unit on September 12 and 13. MWH conducted a health and safety kickoff meeting for Vidimus on September 12 for confined-space welding repair inside the thermal oxidizer scrubber prior to beginning work.

Since the original metal packing material used in the thermal oxidizer unit became corroded, MWH is evaluating other long-term options for metal packing material inside the unit. In the interim, MWH is using a chemical-resistant polyethylene packing material to operate the system. This packing provides increased resistance to corrosion, however it is not as resistant to very high temperatures as metal packing.

The ISVE system repairs were completed September 17. The internal packing was washed down and MWH began trial runs to restart the system. During trial runs, a high fire gas valve malfunctioned and was repaired on September 19.

The system was restarted on September 23 and ran intermittently during the last week of September. Initial complications with the pH adjustment system have been resolved. Since restarting the system, MWH has operated the system with lower high-temperature alarm points to avoid any potential damage to the plastic packing. The unit is not maintaining the required temperature, however, and MWH is investigating possible solutions.

Due to system repair, no ISVE system monitoring results were collected during September.

Performance Standard Verification Plan (PSVP) Sampling

In accordance with the PSVP, the thermal oxidizer off-gas will be sampled monthly during operation. The thermal oxidizer (ISVE system) off-gas was sampled on August 8.

The catalytic oxidizer unit (Groundwater Treatment Plant or GWTP) off-gas was also sampled on August 8. The catalytic oxidizer unit was sampled while MWH evaluated the need for future sampling of the catalytic oxidizer based on data from the eight initial rounds of off-gas compliance sampling, in accordance with the procedures of the PSVP.

Analytical data for the August 8 samples have been validated by MWH and are included in Tables 1, 2, 3, and 4 attached. The data indicate, as shown in Tables 5 and 6, that both the ISVE system and GWTP system are operating within their permitted requirements of discharging less than three pounds of VOCs per day.

Since the catalytic oxidizer met the discharge requirements of less than three pounds VOCs per day during the eight initial rounds of sampling, the catalytic oxidizer will be sampled annually, in accordance with the IDEM regulations and the PSVP. The next sample is tentatively scheduled to be collected during June 2003.

Influent and effluent off-gas samples from the thermal oxidizer unit were collected on September 30. The VOC analytical data will be included in a future monthly progress report. Due to a laboratory procedural error the SVOC samples could not be analyzed.

This SVOC sample could not be immediately resampled because the system was not in operation. The next SVOC sample will be collected in conjunction with the October 2002 monthly off-gas sample.

ISVE System for Still Bottoms Pond Area (SBPA) (2.d.)

Boart Longyear & Associates (BLA), the subcontractor that installed the Off-Site Area ISVE wells during fall 2001, has been selected to install the ISVE wells in the SBPA. A final scope document has been prepared to define the work activities. It has been submitted to the U.S. EPA, IDEM, and Black & Veatch for information purposes. BLA has been given notice to proceed for the work and is scheduled to begin work during the week of October 14 or 21, depending on progress in the installation of the On-Site Area Interim Cover.

Bids have been received for the installation of an additional thermal oxidizer unit for the SBPA ISVE system. MWH is reviewing the bids that have been received.

Interim Cover of On-Site Area (5.c.)

Security Fencing began installing temporary fencing around the work area inside the ACS facility on August 29 and finished on September 6.

Hard Hat Services, Inc. (HHSI) mobilized to the Site on September 10 to install the On-Site Area Interim Engineered Cover. A kickoff health and safety and construction meeting was conducted by MWH on September 10. HHSI completed the subbase preparation for the interim cover on September 19 and surveyed the subbase on September 20 and 23. HHSI began trenching and installing pipe on September 23. They have completed pipe trenches A and B, including pressure testing. HHSI is continuing to trench pipe run C. HHSI anticipates beginning to import clay material to the Site for placement by October 7.

During subbase preparation, MWH observed void spaces that are visible in the northern portion of the SBPA. These void spaces are caused by debris that is located in the area of the original treatment lagoon. These findings are consistent with the findings of the Remedial Investigation in this area. MWH will evaluate the potential impact of these void spaces on the clay cover. MWH will either remove and rebury the material or fill the voids.

MWH has modified the perimeter cut design in two areas along the northern edge of the SBPA. Existing stormwater pipes, which run just inside the SBPA cover extents, will be covered with flexible membrane liner (FML), geotextile, and gravel instead of the 12-inches of clay as originally planned. This will result in a thinner but equally effective cover and enable the original design contours to be achieved in this area. A detail of this alternative was included in the minutes from the September 19 weekly construction meeting. The FML material to be used is excess material from the Off-Site Area Final Cover construction and is already approved for use.

Final Cover of Off-Site Area (5.d.)

Environmental Contractors of Illinois (ECI), the subcontractor selected to install the Off-Site Area final engineered cover, mobilized to the Site August 21 and began preparing the site for liner installation, as described in last month's progress report.

Mid-America Lining (MAL), the subcontractor selected by ECI to install the flexible membrane liner (FML) material in the Off-Site Area, mobilized on September 4. Lee Orosz, the MWH Site Health and Safety officer, led a health and safety kickoff meeting for ECI and Mid-America Lining Company (MAL) on September 4 prior to beginning liner installation.

ECI constructed, tested, and analyzed a test pad on September 4 prior to beginning liner installation. MWH confirmed the construction techniques and loading did not damage the FML portion of the test pad.

MAL began installing liner on September 5 and completed liner installation on September 7. They completed final extrusion welding and quality control testing on September 10 and demobilized on September 11. All quality control/quality assurance testing for the liner installation, including destructive and non-destructive testing, has been completed.

ECI began the placement of root zone material over the completed liner on September 9, beginning with the on-site stockpile of material excavated from the wetlands during 2001 and importing additional root zone material as needed. ECI completed placement of root zone material over the completed liner on September 26 and completed compaction and moisture testing of the placed root zone material on October 1.

ECI began topsoil placement on September 26 and completed placement on October 2. Grass seed was placed over the site on October 3 using hydroseeding methods after the topsoil was installed. ECI completed the re-installation of the gravel access road between Colfax Avenue and the Off-Site Area Blower Shed on October 2. ECI demobilized equipment on October 3 and 4.

ECI damaged extraction well SVE-38 during soil placement activities on September 24. Further investigation indicated that there was limited damage to the well. MWH is working with ECI to assure a complete and adequate repair of the well as soon as possible.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate the participants. During September 2002, weekly construction meetings were held on the 5th, 12th, 19th, and 26th. The minutes from each

meeting were faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)

The Groundwater Treatment Plant (GWTP) continued to operate as designed during September 2002. The GWTP is currently treating 40 to 50 gallons per minute (gpm) of influent water. The On-Site Area Barrier Wall Extraction System (BWES), the Off-Site Area BWES, and the Perimeter Groundwater Containment System (PGCS) are currently bringing influent to the GWTP.

The GWTP was not operating on September 12 while sludge build-up in the lamella clarifier was cleaned out as part of routine repair and maintenance.

Personnel from the ACS facility damaged one of the Barrier Wall Extraction System (BWES) lines in the On-Site Area during the week of September 23, preventing the GWTP from bringing in water from the On-Site Area. ACS personnel have repaired the line and the On-Site Area BWES is in operation again.

Momper Insulation began insulating the exterior of the activated sludge plant and aeration tank on August 26. The insulation was completed on September 3, 2002. Preparations for the activated sludge plant heat exchanger system continue. MWH has reviewed and approved design drawings from Omega Company. The heat exchanger is scheduled to arrive during November 2002. The insulation and the heat exchanger system are being installed to improve the treatment efficiency of the aeration tank and activated sludge plant during the winter months.

Beginning with the August 2002 sample, MWH will be analyzing GWTP effluent samples for VOCs and pH on a monthly frequency. MWH will analyze for BOD, TSS, SVOCs, Metals, and PCBs quarterly, in accordance with the PSVP. The August 2002 sample was collected on August 29 and was analyzed for pH and VOCs. Analytical results are summarized in Table 2.2. No exceedences of the discharge limits were reported.

The September 2002 sample was collected on September 26 and will be analyzed for pH and VOCs only. Analytical results will be included in a future monthly status report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)

MWH conducted the third quarter groundwater monitoring event during the week of September 9, 2002. MWH measured water level elevations on September 9, and collected groundwater samples from September 10 to 13. Due to a shipping delay by FedEx, a few samples arrived at the laboratory at elevated temperatures and required resampling. MWH completed the resampling of these monitoring wells on September 23, 2002. Analytical results will be included in a future monthly progress report.

The next round of sampling is scheduled for March 2003. It will be a full round with analysis of the full Target Compound List/Target Analyte List parameters.

Residential Well Water Quality Monitoring (B.8.)
The annual round of residential well sampling was completed during September. Analytical results will be included in a future monthly progress report. The next residential sampling round is scheduled for September 2003.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to or approved by the U.S. EPA and IDEM.

Reports Being Prepared

- **In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.) -** the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in November 2002.

- **Groundwater, Air Quality, Wetland, and Monitoring (B.7) –** the March 2002 Groundwater Monitoring Quarterly Report has been completed and will be submitted to the Agencies during October.

Reports Recently Submitted

- **Groundwater Plume Treatment (1.e.) –** a report summarizing the South Area Oxygen Release Compound (ORC®) Pilot Study was submitted to the Agencies on September 20.

- **Treatment System Monitoring (B.1, 2, 3, 4) –** the Groundwater Treatment System Quarterly Monitoring Report – Fourth Quarter 2001 and the Groundwater Treatment System Quarterly Monitoring Report – First Quarter 2002 were submitted to the Agencies on October 3.

- **Groundwater, Air Quality, Wetland, and Monitoring (B.7) –** in March 2002, MWH submitted responses to Agency comments on the revised Long-Term Groundwater Monitoring Plan. The U.S. EPA approved the Plan on June 26, 2002. MWH distributed copies of the approved Plan on September 20.

The next monthly report will be forwarded to U.S. EPA and IDEM by November 11, 2002. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH

for

Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Updated Schedule of Remedial Activities
Table 1 – Round 9 Thermal Oxidizer Results for Method TO-14 (VOCs)
Table 2 – Round 9 Thermal Oxidizer Results for Method TO-13 (SVOCs)
Table 3 – Round 9 Catalytic Oxidizer Results for Method TO-14 (VOCs)
Table 4 – Round 9 Catalytic Oxidizer Results for Method TO-13 (SVOCs)
Table 5 – VOC Influent and Effluent Mass Loading – Thermal Oxidizer
Table 6 – VOC Influent and Effluent Mass Loading – Catalytic Oxidizer
Table 2.2 – Summary of Effluent Analytical Results – Third Quarter 2002

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Jim Vondracek - Ashland Chemical Company
Larry Campbell – Black & Veatch
Rob Adams – MWH
Peter Vagt – MWH
Travis Klingforth – MWH
FILE

TMK/RAA/PJV/emp
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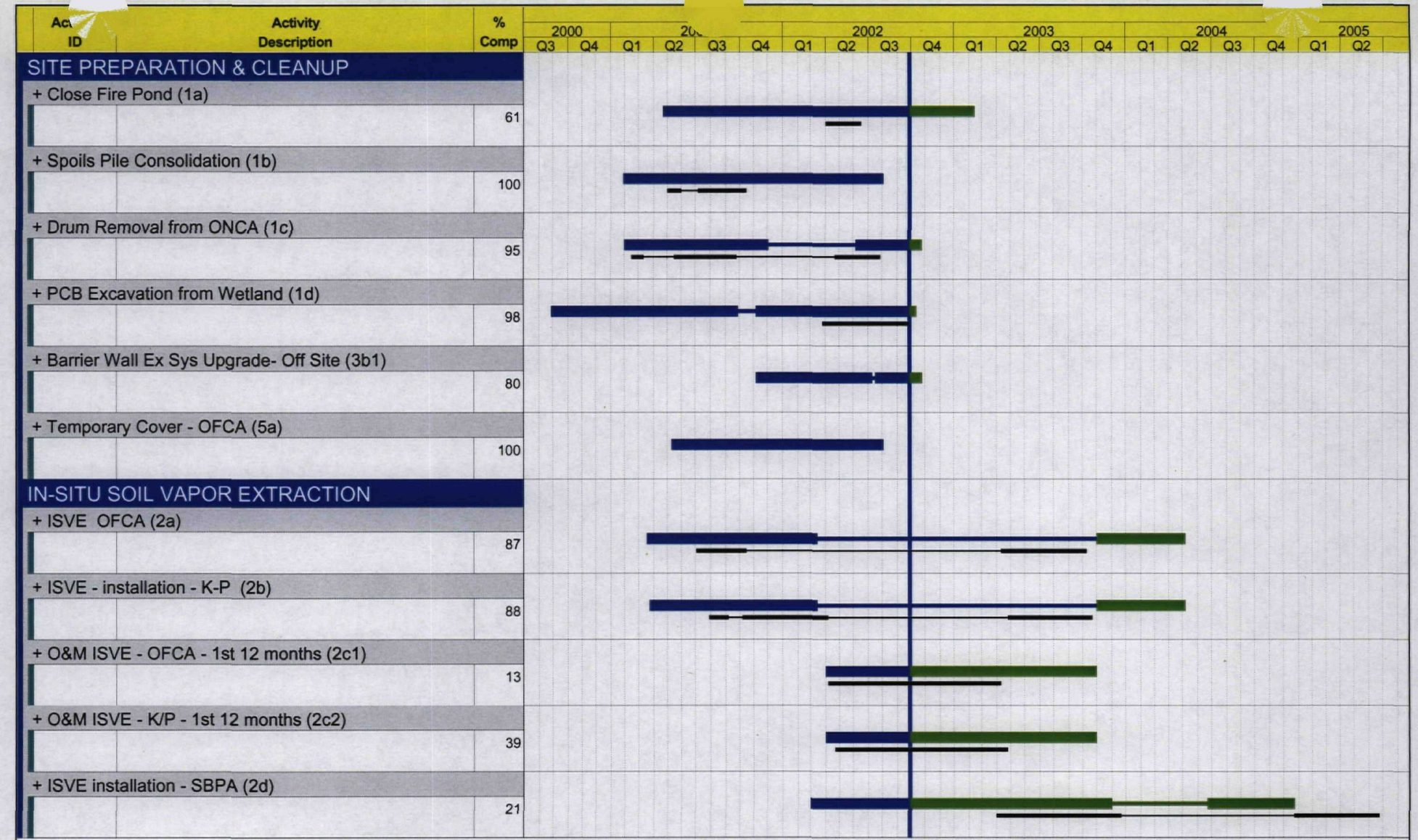

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Run Date 09OCT02 12:54

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of September 2002 Report

MWH
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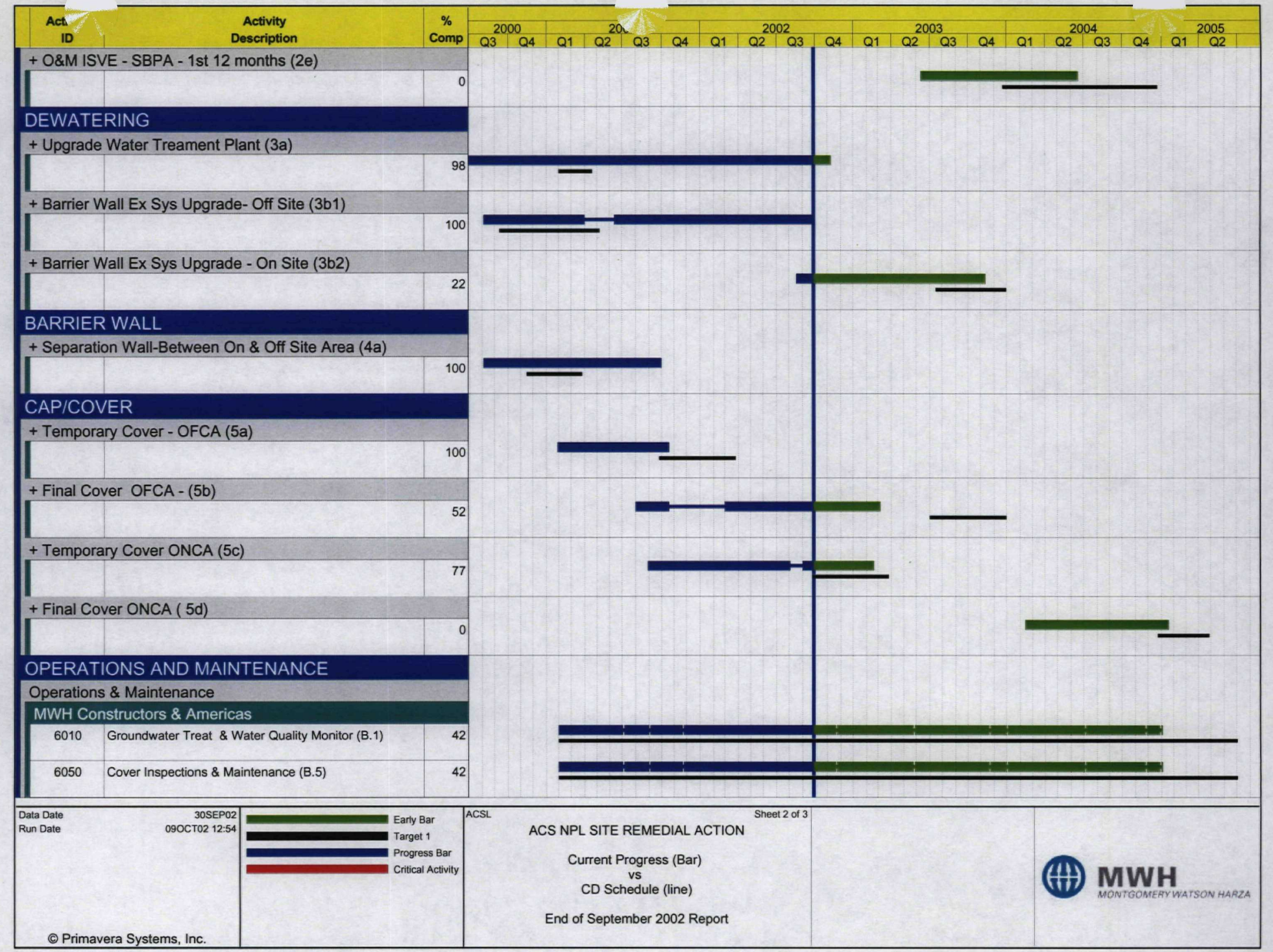

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Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of September 2002 Report

MWH
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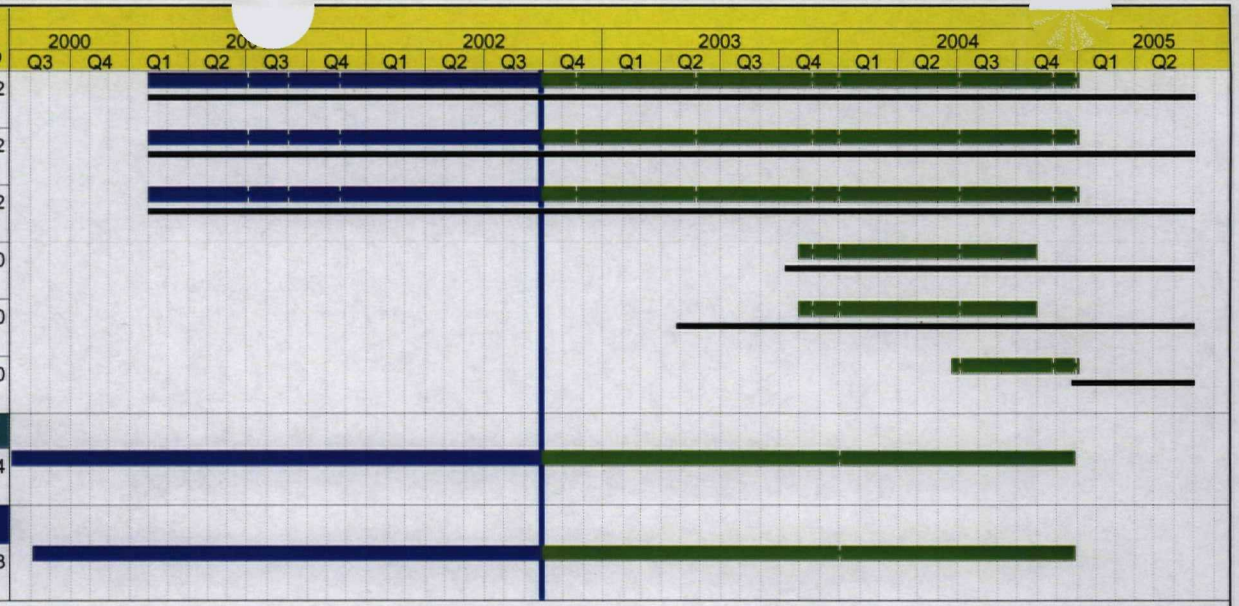
Act ID	Activity Description	% Comp
6060	Monitored Natural Attenuation (B.6)	42
6070	Groundwater, Air & Wetland Monitoring (B.7)	42
6080	Residential Well Monitoring (B.8)	42
6020	OFCA SVE sys O&M after 1st 12 months (B.2)	0
6030	K/P Area SVE Sys O&M after 1st 12 months (B.3)	0
6040	SBPA SVE Sys O&M after 1st 12 months (B.4)	0
+ MWH Americas		44
+ MANAGEMENT		48



Data Date 30SEP02
Run Date 09OCT02 12:54

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of September 2002 Report

MWH
MONTGOMERY WATSON HARZA

Table 1
Round 9 Thermal Oxidizer Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 9 - Sampled 8/8/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	7.6	NC	NC	NC
Vinyl Chloride	ppbv	3,300	4,100	3.1	99.91%	99.92%	99.92%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	ND	ND	ND	100.00%	100.00%	100.00%
1,1-Dichloroethene	ppbv	ND	ND	6.9	NC	NC	NC
Methylene Chloride	ppbv	120,000	110,000	7.2	99.98%	100.00%	99.99%
1,1-Dichloroethane	ppbv	33,000	29,000	1.2	100.00%	100.00%	100.00%
cis-1,2-Dichloroethene	ppbv	59,000	59,000	4.5	100.00%	100.00%	100.00%
Chlororform	ppbv	6,600	7,200	1.6	100.00%	100.00%	100.00%
1,1,1-Trichloroethane	ppbv	120,000	130,000	4.1	100.00%	100.00%	100.00%
Carbon Tetrachloride	ppbv	ND	ND	1.3	NC	NC	NC
Benzene	ppbv	110,000	120,000	13	99.99%	99.99%	99.99%
1,2-Dichloroethane	ppbv	ND	3,900	ND	100.00%	100.00%	100.00%
Trichloroethene	ppbv	72,000	78,000	6.5	100.00%	100.00%	100.00%
1,2-Dichloropropane	ppbv	ND	ND	ND	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	910,000	940,000	13	100.00%	100.00%	100.00%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	89,000	92,000	9.7	99.99%	99.99%	99.99%
Chlorobenzene	ppbv	ND	ND	0.83	NC	NC	NC
Ethylbenzene	ppbv	75,000	91,000	ND	100.00%	100.00%	100.00%
m,p-Xylene	ppbv	270,000	340,000	1.4	100.00%	100.00%	100.00%
o-Xylene	ppbv	76,000	97,000	ND	100.00%	100.00%	100.00%
Styrene	ppbv	ND	ND	0.80	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	110,000	85,000	84	99.52%	99.92%	99.72%
Carbon Disulfide	ppbv	ND	ND	ND	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	ND	NC	NC	NC
2-Butanone (MEK)	ppbv	130,000	120,000	15	99.99%	99.99%	99.99%
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	57,000	57,000	ND	100.00%	100.00%	100.00%
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	**ppbv**	**2,240,900**	**2,363,200**	**181.73**	**99.99%**	**99.99%**	**99.99%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Qualifiers:
J - Result is estimated

Table 2
Round 9 Thermal Oxidizer Result for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 9 - Sampled 8/8/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	4.3 J/J	3.6 J/J	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND	ND	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	ND	ND	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	2.4	1.8	ND	100.00%	100.00%	100.00%
1,2-Dichlorobenzene	µg	20	15	ND	100.00%	100.00%	100.00%
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	10	6.6	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-Dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	0.84 J/J	0.56 J/J	ND	NC	NC	NC
Naphthalene	µg	22	16	ND	100.00%	100.00%	100.00%
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	0.69 J/J	0.50 J/J	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	2.8	1.8	ND	100.00%	100.00%	100.00%
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND /R	ND /R	ND /R	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	ND	ND	0.40 J/J	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	ND	ND	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	0.30 J/J	0.54 J/J	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	ND	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	57	41.2	ND	100.00%	100.00%	100.00%

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 3
Round 9 Catalytic Oxidizer Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 9 - Sampled 8/8/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	ND	ND	130	NC	NC	NC
Vinyl Chloride	ppbv	5,000	5,600	610	87.80%	89.11%	88.45%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	2,100	2,400	180	91.43%	92.50%	91.96%
1,1-Dichloroethene	ppbv	ND	ND	38	NC	NC	NC
Methylene Chloride	ppbv	160	180	100	37.50%	44.44%	40.97%
1,1-Dichloroethane	ppbv	680	780	57	91.62%	92.69%	92.15%
cis-1,2-Dichloroethene	ppbv	10,000	12,000	1,100	90.83%	89.00%	89.92%
Chlororform	ppbv	ND	ND	12	NC	NC	NC
1,1,1-Trichloroethane	ppbv	410	460	19	95.37%	95.87%	95.62%
Carbon Tetrachloride	ppbv	ND	ND	4.5 J/J	NC	NC	NC
Benzene	ppbv	14,000	17,000	1,900	86.43%	88.82%	87.63%
1,2-Dichloroethane	ppbv	84	86	40	52.38%	53.49%	52.93%
Trichloroethene	ppbv	94	120	14	85.11%	88.33%	86.72%
1,2-Dichloropropane	ppbv	63	86	5.2 J/J	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	8,600	11,000	830	90.35%	92.45%	91.40%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	ND	65	19	NC	70.77%	NC
Chlorobenzene	ppbv	760	1,000	140	81.58%	88.04%	88.04%
Ethylbenzene	ppbv	2,000	2,600	150	92.50%	94.23%	93.37%
m,p-Xylene	ppbv	7,700	11,000	560	92.73%	94.91%	93.82%
o-Xylene	ppbv	2,400	3,400	180	92.50%	94.71%	93.60%
Styrene	ppbv	ND	ND	28	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	190	240	120	36.84%	50.00%	43.42%
Carbon Disulfide	ppbv	ND	ND	8.7 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	100	NC	NC	NC
2-Butanone (MEK)	ppbv	ND	ND	9.4 J/J	NC	NC	NC
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	ND	ND	5.5 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	**ppbv**	**54,241**	**68,017**	**6,327**	**88.34%**	**90.70%**	**89.52%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Qualifiers:
J - Result is estimated

Table 4
Round 9 Catalytic Oxidizer Results for Method TO-13 (SVOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 9 - Sampled 8/8/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-13							
Phenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethyl)ether	µg	ND	ND	ND	NC	NC	NC
2-Chlorophenol	µg	ND	ND	ND	NC	NC	NC
1,3-Dichlorobenzene	µg	0.88 J/J	0.99 J/J	ND	NC	NC	NC
1,4-Dichlorobenzene	µg	9.9	11	2.1	78.79%	91.67%	91.67%
1,2-Dichlorobenzene	µg	14	16	2.6	83.75%	81.43%	82.59%
2-Methylphenol (o-Cresol)	µg	ND	ND	ND	NC	NC	NC
N-Nitroso-di-n-propylamine	µg	ND	ND	ND	NC	NC	NC
4-Methylphenol	µg	ND	ND	ND	NC	NC	NC
Hexachloroethane	µg	ND	ND	ND	NC	NC	NC
Nitrobenzene	µg	ND	ND	ND	NC	NC	NC
Isophorone	µg	ND	ND	ND	NC	NC	NC
2-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dimethylphenol	µg	ND	ND	ND	NC	NC	NC
bis(2-Chloroethoxy) Methane	µg	ND	ND	ND	NC	NC	NC
2,4-dichlorophenol	µg	ND	ND	ND	NC	NC	NC
1,2,4-Trichlorobenzene	µg	1.2	1.4	0.39 J/J	NC	NC	NC
Naphthalene	µg	1.9	2.4	ND	100.00%	100.00%	100.00%
4-Chloroaniline	µg	ND	ND	ND	NC	NC	NC
Hexachlorobutadiene	µg	ND	ND	ND	NC	NC	NC
4-Chloro-3-methylphenol	µg	ND	ND	ND	NC	NC	NC
2-Methylnaphthalene	µg	0.54 J/J	0.71 J/J	ND	NC	NC	NC
Hexachlorocyclopentadiene	µg	ND	ND	ND	NC	NC	NC
2,4,6-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2,4,5-Trichlorophenol	µg	ND	ND	ND	NC	NC	NC
2-Chloronaphthalene	µg	ND	ND	ND	NC	NC	NC
2-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Dimethylphthalate	µg	ND	ND	ND	NC	NC	NC
Acenaphthylene	µg	ND	ND	ND	NC	NC	NC
2,6-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
3-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
Acenaphthene	µg	ND /R	ND /R	ND /R	NC	NC	NC
2,4-Dinitrophenol	µg	ND	ND	ND	NC	NC	NC
4-Nitrophenol	µg	ND	ND	ND	NC	NC	NC
2,4-Dinitrotoluene	µg	ND	ND	ND	NC	NC	NC
Dibenzofuran	µg	ND	ND	ND	NC	NC	NC
Diethylphthalate	µg	0.21 J/J	ND	0.29 J/J	NC	NC	NC
Fluorene	µg	ND	ND	ND	NC	NC	NC
4-Chlorophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
4-Nitroaniline	µg	ND	ND	ND	NC	NC	NC
4,6-Dinitro-2-methylphenol	µg	ND	ND	ND	NC	NC	NC
N-Nitrosodiphenylamine	µg	ND	ND	ND	NC	NC	NC
4-Bromophenyl-phenyl Ether	µg	ND	ND	ND	NC	NC	NC
Hexachlorobenzene	µg	ND	ND	ND	NC	NC	NC
Pentachlorophenol	µg	ND	ND	ND	NC	NC	NC
Phenanthrene	µg	ND	ND	ND	NC	NC	NC
Anthracene	µg	ND	ND	ND	NC	NC	NC
di-n-Butylphthalate	µg	ND	ND	ND	NC	NC	NC
Fluoranthene	µg	ND	ND	ND	NC	NC	NC
Pyrene	µg	ND	ND	ND	NC	NC	NC
Butylbenzylphthalate	µg	0.24 J/J	ND	ND	NC	NC	NC
3,3'-Dichlorobenzidine	µg	ND	ND	ND	NC	NC	NC
Chrysene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)anthracene	µg	ND	ND	ND	NC	NC	NC
bis(2-Ethylhexyl)phthalate	µg	ND	ND	ND	NC	NC	NC
Di-n-Octylphthalate	µg	ND	ND	ND	NC	NC	NC
Benzo(b)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(k)fluoranthene	µg	ND	ND	ND	NC	NC	NC
Benzo(a)pyrene	µg	ND	ND	ND	NC	NC	NC
Indeno(1,2,3-c,d)pyrene	µg	ND	ND	ND	NC	NC	NC
Dibenz(a,h)anthracene	µg	ND	ND	ND	NC	NC	NC
Benzo(g,h,i)perylene	µg	ND	ND	ND	NC	NC	NC
Total	µg	**27.0**	**30.8**	**4.7**	**84.74%**	**82.59%**	**83.67%**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated
UJ - Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
JB - Analyte is detected in the method blank resulting in potential bias high. Reported concentration is estimated.

Destruction efficiency is not calculated where influent and/or effluent values are estimated.

Table 5
VOC Influent and Effluent Mass Loading
Thermal Oxidizer
ACS NPL Site
Griffith, Indiana

	MW	Round 9 - Analytical Data					
		8/8/02					
Compounds		**Influent IN1**	**Influent IN1**	**Influent IN2**	**Influent IN2**	**Effluent EF1**	**Effluent EF1**
Method TO-14	lb/mol	ppbv	lb/hr	ppbv	lb/hr	ppbv	lb/hr
Chloromethane	50.5	ND	-	ND	-	7.6	0.00005
Vinyl Chloride	62.5	3,300	0.027	4,100	0.034	3.1	0.00003
Bromomethane	94.9	ND	-	ND	-	ND	-
Chloroethane	64.5	ND	-	ND	-	ND	-
1,1-Dichloroethene	96.9	ND	-	ND	-	6.9	0.00009
Methylene Chloride	84.9	120,000	1.339	110,000	1.227	7.2	0.00008
1,1-Dichloroethane	99.0	33,000	0.429	29,000	0.377	1.2	0.00002
cis-1,2-Dichloroethene	96.9	59,000	0.752	59,000	0.752	4.5	0.00006
Chloroform	119.4	6,600	0.104	7,200	0.113	1.6	0.00003
1,1,1-Trichloroethane	133.4	120,000	2.104	130,000	2.279	4.1	0.00007
Carbon Tetrachloride	154.0	ND	-	ND	-	1.3	0.00003
Benzene	78.0	110,000	1.128	120,000	1.230	13	0.00013
1,2-Dichloroethane	99.0	ND	-	3,900	0.051	ND	-
Trichloroethene	131.4	72,000	1.243	78,000	1.347	6.5	0.00011
1,2-Dichloropropane	113.0	ND	-	ND	-	ND	-
cis-1,3-Dichloropropene	111.0	ND	-	ND	-	ND	-
Toluene	92.1	910,000	11.017	940,000	11.380	13	0.00016
trans-1,3-Dichloropropene	111.0	ND	-	ND	-	ND	-
1,1,2-Trichloroethane	133.4	ND	-	ND	-	ND	-
Tetrachloroethene	165.8	89,000	1.939	92,000	2.005	9.7	0.00021
Chlorobenzene	112.6	ND	-	ND	-	0.83	0.00001
Ethylbenzene	106.2	75,000	1.047	91,000	1.270	ND	-
m,p-Xylene	106.2	270,000	3.768	340,000	4.745	1.4	0.00002
o-Xylene	106.2	76,000	1.061	97,000	1.354	ND	-
Styrene	104.1	ND	-	ND	-	0.80	0.00001
1,1,2,2-Tetrachloroethane	167.9	ND	-	ND	-	ND	-
Acetone	58.1	110,000	0.840	85,000	0.649	84	0.00064
Carbon Disulfide	76.1	ND	-	ND	-	ND	-
trans-1,2-Dichloroethene	96.9	ND	-	ND	-	ND	-
2-Butanone (MEK)	72.1	130,000	1.232	120,000	1.137	15	0.00014
Bromodichloromethane	163.8	ND	-	ND	-	ND	-
4-Methyl-2-pentanone	100.2	57,000	0.751	57,000	0.751	ND	-
2-Hexanone	100.2	ND	-	ND	-	ND	-
Dibromochloromethane	208.3	ND	-	ND	-	ND	-
Bromoform	253.0	ND	-	ND	-	ND	-
Total		**2,240,900**	**28.778**	**2,363,200**	**30.699**	**181.730**	**0.00188**

ND = Not Detected
ppbv = parts per billion volumetric
lb/hr = pounds per hour

Notes:
1. ND = 0.0 ppbv
2. Estimated values (J-qualifiers) included.
3. MW = molecular weight
4. Lbs./hour = (n)*(MW)* (concentration in ppbv)*(10E-9)

Molar loading from wells (PV=nRT):		
P (psi):	14.7	
V (acfm):	850	Assumed
T (R):	531.69	72F assumed
R (psi-ft3/lbmol-R):	10.73	
n (lbmol/hr):	131.41	

Table 6
VOC Influent and Effluent Mass Loading
Catalytic Oxidizer
ACS NPL Site
Griffith, Indiana

	MW	Round 9 - Analytical Data					
		8/8/02					
Compounds		**Influent IN1**	**Influent IN1**	**Influent IN2**	**Influent IN2**	**Effluent EF1**	**Effluent EF1**
Method TO-14	lb/mol	ppbv	lb/hr	ppbv	lb/hr	ppbv	lb/hr
Chloromethane	50.5	ND	-	ND	-	130	0.00028
Vinyl Chloride	62.5	5,000	0.013	5,600	0.015	610	0.00160
Bromomethane	94.9	ND	-	ND	-	ND	-
Chloroethane	64.5	2,100	0.006	2,400	0.006	180	0.00049
1,1-Dichloroethene	96.9	ND	-	ND	-	38	0.00015
Methylene Chloride	84.9	160	0.001	180	0.001	100	0.00036
1,1-Dichloroethane	99.0	680	0.003	780	0.003	57	0.00024
cis-1,2-Dichloroethene	96.9	10,000	0.041	12,000	0.049	1100	0.00447
Chloroform	119.4	ND	-	ND	-	12	0.00006
1,1,1-Trichloroethane	133.4	410	0.002	460	0.003	19	0.00011
Carbon Tetrachloride	154.0	ND	-	ND	-	4.5	0.00003
Benzene	78.0	14,000	0.046	17,000	0.056	1900	0.00621
1,2-Dichloroethane	99.0	84	0.000	86	0.000	40	0.00017
Trichloroethene	131.4	94	0.001	120	0.001	14	0.00008
1,2-Dichloropropane	113.0	63	0.000	86	0.000	5.2	0.00002
cis-1,3-Dichloropropene	111.0	ND	-	ND	-	ND	-
Toluene	92.1	8,600	0.033	11,000	0.042	830	0.00320
trans-1,3-Dichloropropene	111.0	ND	-	ND	-	ND	-
1,1,2-Trichloroethane	133.4	ND	-	ND	-	ND	-
Tetrachloroethene	165.8	ND	-	65	0.000	19	0.00013
Chlorobenzene	112.6	760	0.004	1,000	0.005	140	0.00066
Ethylbenzene	106.2	2,000	0.009	2,600	0.012	150	0.00067
m,p-Xylene	106.2	7,700	0.034	11,000	0.049	560	0.00249
o-Xylene	106.2	2,400	0.011	3,400	0.015	180	0.00080
Styrene	104.1	ND	-	ND	-	28	0.00012
1,1,2,2-Tetrachloroethane	167.9	ND	-	ND	-	ND	-
Acetone	58.1	190	0.000	240	0.001	120	0.00029
Carbon Disulfide	76.1	ND	-	ND	-	8.7	0.00003
trans-1,2-Dichloroethene	96.9	ND	-	ND	-	100	0.00041
2-Butanone (MEK)	72.1	ND	-	ND	-	9.4	0.00003
Bromodichloromethane	163.8	ND	-	ND	-	ND	-
4-Methyl-2-pentanone	100.2	ND	-	ND	-	5.5	0.00002
2-Hexanone	100.2	ND	-	ND	-	ND	-
Dibromochloromethane	208.3	ND	-	ND	-	ND	-
Bromoform	253.0	ND	-	ND	-	ND	-
Total		**54,241**	**0.203**	**68,017**	**0.257**	**6360.3**	**0.023**

ND = Not Detected
ppbv = parts per billion volumetric
lb/hr = pounds per hour

Notes:
1. ND = 0.0 ppbv
2. Estimated values (J-qualifiers) included.
3. MW = molecular weight
4. Lbs./hour = (n)*(MW)*
   (concentration in ppbv)*(10E-9)

Molar loading from tank (PV=nRT):		
P (psi):	14.7	
V (acfm):	270	Assumed
T (R):	529.69	70F assumed
R (psi-ft3/lbmol-R):	10.73	
n (lbmol/hr):	41.8996942	

Table 2.2
Summary of Effluent Analytical Results - Third Quarter 2002
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 63 8/29/02	Effluent Limits	Lab Reporting
pH	7.39	6-9	none
TSS	NS	30	10
BOD	NS	30	2
Arsenic	NS	50	3.4
Beryllium	NS	NE	0.2
Cadmium	NS	4.1	0.3
Manganese	NS	NE	10
Mercury	NS	0.02 (w/DL = 0.64)	0.64
Selenium	NS	8.2	4.3
Thallium	NS	NE	5.7
Zinc	NS	411	1.2
Benzene	ND	5	0.5
Acetone	3 B/	6,800	3
2-Butanone	ND	210	3
Chloromethane	0.4 J/	NE	0.5
1,4-Dichlorobenzene	ND	NE	0.5
1,1-Dichloroethane	ND	NE	0.5
cis-1,2-Dichloroethene	ND	70	0.5
Ethylbenzene	ND	34	0.5
Methylene chloride	2 B/	5	0.6
Tetrachloroethene	ND	5	0.5
Trichloroethene	ND	5	0.5
Vinyl chloride	ND	2	0.5
4-Methyl-2-pentanone	ND	15	3
bis (2-Chloroethyl) ether	NS	9.6	9.6
bis(2-Ethylhexyl) - phthalate	NS	6	6
4 - Methylphenol	NS	34	10
Isophorone	NS	50	10
Pentachlorophenol	NS	1	1
PCB/Aroclor-1016	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	NS	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:

Data has not yet been validated in accordance with the Project QAPP (November 2001) and the U.S. National Functional Guidelines for Organic Data Review

Shaded cells indicate discharge exceedances

pH data is expressed in S.U.

TSS and BOD5 data is expressed in mg/L

Metals, VOC, SVOC and PCB data is expressed in ug/L

ND = Not detected

NS = This analyte was not sampled or analyzed for

NE = No effluent limit established.

NA = Sample not analyzed for this compound

* = Approved SW-846 method is incapable of achieving effluent limit.

Suffix Definitions:

_/ = Data qualifier added by laboratory

/_ = Data qualifier added by data validator

B = Compound is also detected in the blank

E = Compound exceeds the upper level of calibration range of instrument

J = Result is detected below the reporting limit and is an estimated concentration

Q = Sample was analyzed out of the recommended holding time

R = Quality control indicates the data is not usable

JB = Analyte is detected in the compliance sample below the reporting limit and is an estimated concentration and the compound is also detected in the method blank resulting in a potential higl

U = Analyte is not detected at or above the indicated concentration

UB = Analyte is not detected at or above the indicated concentration due to blank contamination

UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection lim estimated value

D = Result obtained after diluting sample

MWH
MONTGOMERY WATSON HARZA

November 8, 2002

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

√ KA. 11/14/02

Prabhakar Kasarabada
Project Manager
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: Progress Report – October 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Kasarabada:

This monthly progress report is for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of October 2002. The number and letter in parentheses at the end of each heading provide a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (OFCA) (2.a.)

Thermal Oxidizer/Scrubber System

The thermal oxidizer scrubber unit was dismantled during the week of August 19 in response to symptoms of possible corrosion. Corrosion was discovered in the quenching ducting. The ISVE system remained shut down for maintenance and repairs during most of September and all of October. The unit was cleaned and several components including the corroded ducting were repaired.

27755 Diehl Road
Suite 300
Warrenville, Illinois
60555

Tel: 630 836 8900
Fax: 630 836 8959

After repair and re-assembly, the unit was restarted in September, but rising temperatures in the scrubber unit continued to trigger the system's safety features resulting in system shut down.

Rather than completely disassembling the unit again, the Everest Company was hired to examine the ISVE system's thermal oxidizer on October 24. Everest used a fiber-optic scope to inspect and videotape the inside of the thermal oxidizer to assess the integrity of the unit. No cracks or unexpected damage were noted. MWH has also determined that the oxidizer unit had been saturated with water for a period of time. This may have inhibited proper operation. The unit has been reassembled and began operating in fresh air hot idle mode on October 31 to dry the unit before bringing it back online. The ISVE system was brought back online on November 4.

Since the system was not operating during the repair activities, no ISVE system monitoring results were collected during October.

Performance Standard Verification Plan (PSVP) Sampling
In accordance with the PSVP, the thermal oxidizer off-gas is sampled monthly during operation. Due to system repair, no thermal oxidizer (ISVE system) off-gas was collected during October.

Influent and effluent off-gas samples from the thermal oxidizer unit were last collected on September 30, 2002. The VOC analytical data will be included in a future monthly progress report. Due to a laboratory procedural error, the SVOC samples could not be analyzed. This SVOC sample could not be immediately resampled because the system was not in operation. The next SVOC sample will be collected in conjunction with the next monthly off-gas sample.

ISVE System for Still Bottoms Pond Area (SBPA) (2.d.)
Boart Longyear & Associates (BLA) began mobilization for installation of the ISVE wells in the SBPA of the On-Site Area on October 17. A kickoff construction meeting was conducted October 17 with MWH and BLA. Additional mobilization activities were conducted on October 24. A health and safety kickoff meeting including review of Level B personal protective equipment (PPE) was conducted on October 24 for BLA personnel scheduled to install ISVE wells.

MWH reviewed and approved submittals from BLA. Area Survey marked the proposed well locations in the field for BLA on October 24. BLA began installation of the six air sparge wells to be placed in the On-Site Area on October 24. The drilling work is being performed in Level B personal protective equipment (PPE) which includes supplied breathing air. Air monitoring has been conducted regularly in the breathing zones of the drillers and around the perimeter of the work area. Air monitoring results in the breathing zones during well installation have ranged from 13 to 340 parts per million (ppm). There have been no detections of VOCs at the perimeter of the work zone. Soil cuttings resulting from drilling activities are placed in hazardous waste roll-off boxes and covered for future placement.

BLA began installation of the 21 dual-phase extraction wells on October 28. Three days later, at the end of October, BLA had completed the installation of six air sparge wells and seven dual-phase extraction wells. BLA has also completed site soil characterization that included collecting samples from the bottom of the screen interval of the perimeter dual-phase extraction wells. These soil samples were used to characterize the site stratigraphy to assist in selecting total depth for each well. It was determined that the buried conveyance piping encircling the site will be supplied with air at 10 psi in order to alert BLA and MWH if this pipe is damaged during the well installation. Barring delays due to weather, BLA anticipates completing all well installation work by mid-November.

The well installation plan called for six-inches of sand to be placed above the well screen of each well. MWH has increased the sand thickness to 12-inches in order to reduce the chance for bentonite grout (which is installed above the sand layer) to seep down into the well screen.

Construction drawings for the ISVE vapor conveyance piping have been finalized and were distributed to the Agencies and Black & Veatch on November 1, 2002. The compressed air and vapor piping will be placed on top of the clay and not in the clay, which is a variance from the original design in the Final Remedy. By installing the piping on top of the clay, the clay will not need to be disturbed and subsequently repaired. The well saddles have been ordered. The vapor conveyance pipe installation is scheduled to begin in mid-November.

MWH expects to place the order in early November for a new thermal oxidizer from Global Technologies/Anguil Environmental Systems to run the On-Site Area ISVE system. The estimated delivery time is 14 to 16 weeks after the order is placed, so the unit should arrive in February 2003. MWH is considering the purchase of a 2,000 cubic feet per minute unit. This is a larger capacity unit and it will allow MWH to treat vapor from both the On-Site and Off-Site Area ISVE systems and provide back up air treatment to increase the reliability of the ISVE systems. The extra capacity will also allow for greater volatile organic compound (VOC) treatment and potential expansion in the future.

Interim Cover of On-Site Area (5.c.)

Hard Hat Services, Inc. (HHSI) completed pipe installation, pipe surveying, and trench backfilling during the week of October 14, 2002. During pipe installation, MWH and HHSI field-adjusted the proposed alignment of the southern and eastern pipe trenches to conform to actual field conditions, especially at the locations of buried debris. Also, one section of conveyance piping approximately 15 feet long near the ACS facility drum dock in the northeast portion of the cover area was installed at a shallower depth than designed due to the presence of debris. MWH does not anticipate that this placement will limit the extraction capability of the system. The conveyance piping is a complete loop, so in the event of the pipe freezing in this section during the winter, MWH will still be able to operate the system with all dual-phase extraction wells. The type of pipe installed (HDPE) will not be damaged if freezing should occur.

HHSI and MWH conducted air monitoring during HHSI's activities. There were spikes in VOC readings in field instruments, especially immediately after trenching a new section. However the readings were not sustained and quickly dissipated. While trenching and installing conveyance pipe, HHSI wore full-face negative pressure respirators and practiced engineering controls including working upwind, performing air monitoring, and using an exclusion zone. After completing this intrusive work, HHSI crew members downgraded to wearing Level D PPE.

HHSI completed pressure testing the final underground conveyance piping in the On-Site Area within their scope on October 17. All pipes have passed the pressure tests.

HHSI began to import clay material to the Site for placement on October 9. Great Lakes performed compaction and moisture tests on the soil as it was placed. A health and safety meeting was held on October 9 for Great Lakes Soil and Environmental personnel scheduled to perform compaction and moisture testing in the On-Site Area.

Placement and testing of the first six-inch lift was completed on October 22. Placement of the second six-inch lift was completed on October 24. Great Lakes completed compaction and moisture testing of the installed clay on October 28. Area Survey began surveying the top of clay contours on October 24 and completed surveying on October 29.

Geotextile fabric for the access road and catch basins was delivered to the site on October 31. Construction of the gravel access road commenced on November 4. HHSI anticipates completing the access road and demobilizing from the Site by November 15. MWH and HHSI will perform a site walk to identify remaining items needing completion.

Final Cover of Off-Site Area (5.d.)

Environmental Contractors of Illinois (ECI) completed placement of root zone material over the completed flexible membrane liner (FML) on September 26 and completed compaction and moisture testing of the placed root zone material on October 1.

ECI began topsoil placement on September 26 and completed placement on October 2. Grass seed was placed over the site on October 3 after the topsoil was installed. A health and safety meeting was held with the Cooling Company, the grass seed installation crew that performed the Off-Site Area seeding, prior to the seeding activities.

ECI completed the re-installation of the gravel access road between Colfax Avenue and the Off-Site Area Blower Shed on October 2. ECI demobilized equipment on October 3 and 4. In addition, all piezometers and extractions wells in the liner area have been protected by placing concrete rings around them. Duneland Surveyors completed a final topographic survey of the Site on October 8.

Repair of damage to extraction well SVE-38 was completed on October 10. The above-ground stick-up portion of well was replaced. A slight bend remains in the well just above the saddle connecting the conveyance piping to the well. MWH has tested the well and the integrity of the well does not appear to have been compromised. Additional bentonite has

been placed around the bend area to further ensure a good seal. Mid-America Lining repaired the FML liner around the well on October 10. Clay, root zone, topsoil, and grass seed were replaced around the well in accordance with the design. The well was resurveyed by Area Survey on October 23 to allow water levels to be collected from the well as needed.

MWH and ECI have completed the final punchlist items remaining for project completion, including the repositioning of rip rap along the western drainage swale and the repair of SVE-38.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate the participants. During October 2002, weekly construction meetings were held at the Site on the 3rd, 10th, 17th, 24th, and 31st. The minutes from each meeting were faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)

The Groundwater Treatment Plant (GWTP) continued to operate as designed during the reporting period. The GWTP is currently treating approximately 40 gallons per minute (gpm) of influent water. The On-Site Area Barrier Wall Extraction System (BWES), the Off-Site Area BWES, and the Perimeter Groundwater Containment System (PGCS) are currently bringing influent to the GWTP.

The entire system was shut down October 28 in order to remove sludge from tank T-2 and perform other routine maintenance. The sludge was removed to prepare for installation of the heat exchanger in the tank.

Preparations for the activated sludge plant heat exchanger system continue. MWH has reviewed and approved design drawings from Omega Company. The insulation and the heat exchanger system are being installed to improve the treatment efficiency of the aeration tank and activated sludge plant during the winter months. The heat exchanger was delivered to the Site during the week of October 21. It is scheduled to be installed during the week of November 4 as a new component of the activated sludge plant of the GWTP. The GWTP will be shut down for two to three days during the week of November 4 so that the heat exchanger can be installed.

MWH is modifying a pumping system to purge approximately one gpm from both monitoring well MW-10C and monitoring well MW-56 to the GWTP for treatment. These pumps have been in service previously. This installation is to "winterize" them so they won't have to be shut down later in the year. MWH anticipates beginning to operate the pumping system during November. MWH installed the electrical and piping lines for the system during the week of October 14. MWH is currently preparing the control and pumping systems for operation.

Beginning with the August 2002 sample, MWH will be analyzing GWTP effluent samples for VOCs and pH on a monthly frequency. MWH will analyze for BOD, TSS, SVOCs, metals, and PCBs quarterly, in accordance with the PSVP. The September 2002 sample was collected on September 26 and was analyzed for pH and VOCs. Analytical results are summarized in Table 2.2. No exceedences of the discharge limits were reported.

The October 2002 sample was collected on October 24 and will be analyzed for pH, VOCs, BOD, TSS, SVOCs, metals, and PCBs. Analytical results will be included in a future monthly status report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)
MWH conducted the third quarter groundwater monitoring event during September 2002. Analytical results will be included in a future monthly progress report. The next round of sampling is scheduled for March 2003. It will be a full round with analysis of the full Target Compound List/Target Analyte List parameters.

Residential Well Water Quality Monitoring (B.8.)
The annual round of residential well sampling was completed during September. One residential well was resampled on October 24 in order to confirm the accuracy of the initial analytical results from the September sampling. Analytical results will be validated and included in a future monthly progress report. The next residential sampling round is scheduled for September 2003.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to or approved by the U.S. EPA and IDEM.

Reports Being Prepared

- **In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.) -** the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in December 2002.

Reports Recently Submitted

- **Treatment System Monitoring (B.1, 2, 3, 4)** – the Groundwater Treatment System Quarterly Monitoring Report – Fourth Quarter 2001 and the Groundwater Treatment System Quarterly Monitoring Report – First Quarter 2002 were submitted to the Agencies on October 3.

- **Groundwater, Air Quality, Wetland, and Monitoring (B.7)** – the March 2002 Groundwater Monitoring Quarterly Report was submitted to the Agencies on October 9.

Reports Previously Submitted Requiring Finalization

- **Drum Removal in On-Site Containment Area (1.c.)** – the Construction Completion Report was submitted to the Agencies on August 12, 2002.

- **PCB Sediment Excavation from Wetland (1.d.)** – the Construction Completion Report was submitted to the Agencies on July 1, 2002. The U.S. EPA responded with comments on August 20. MWH submitted a response to comments letter to the Agencies on September 23.

- **Barrier Wall Extraction System (BWES) Upgrades (3.b.)** - the Construction Completion Report was submitted to the Agencies on July 16, 2002.

- **Interim Engineered Cover of Off-Site Area (5.a.)** – the Construction Completion Report was submitted to the Agencies on June 19, 2002. The U.S. EPA responded with comments on August 20. MWH submitted a response to comments letter to the Agencies on September 23.

The next monthly report will be forwarded to U.S. EPA and IDEM by December 10, 2002. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH

Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Updated Schedule of Remedial Activities
Table 2.2 – Summary of Effluent Analytical Results – Third Quarter 2002

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Jim Vondracek - Ashland Chemical Company
Larry Campbell – Black & Veatch
Rob Adams – MWH
Peter Vagt – MWH
Travis Klingforth – MWH
FILE

TMK/RAA/PJV/jmf
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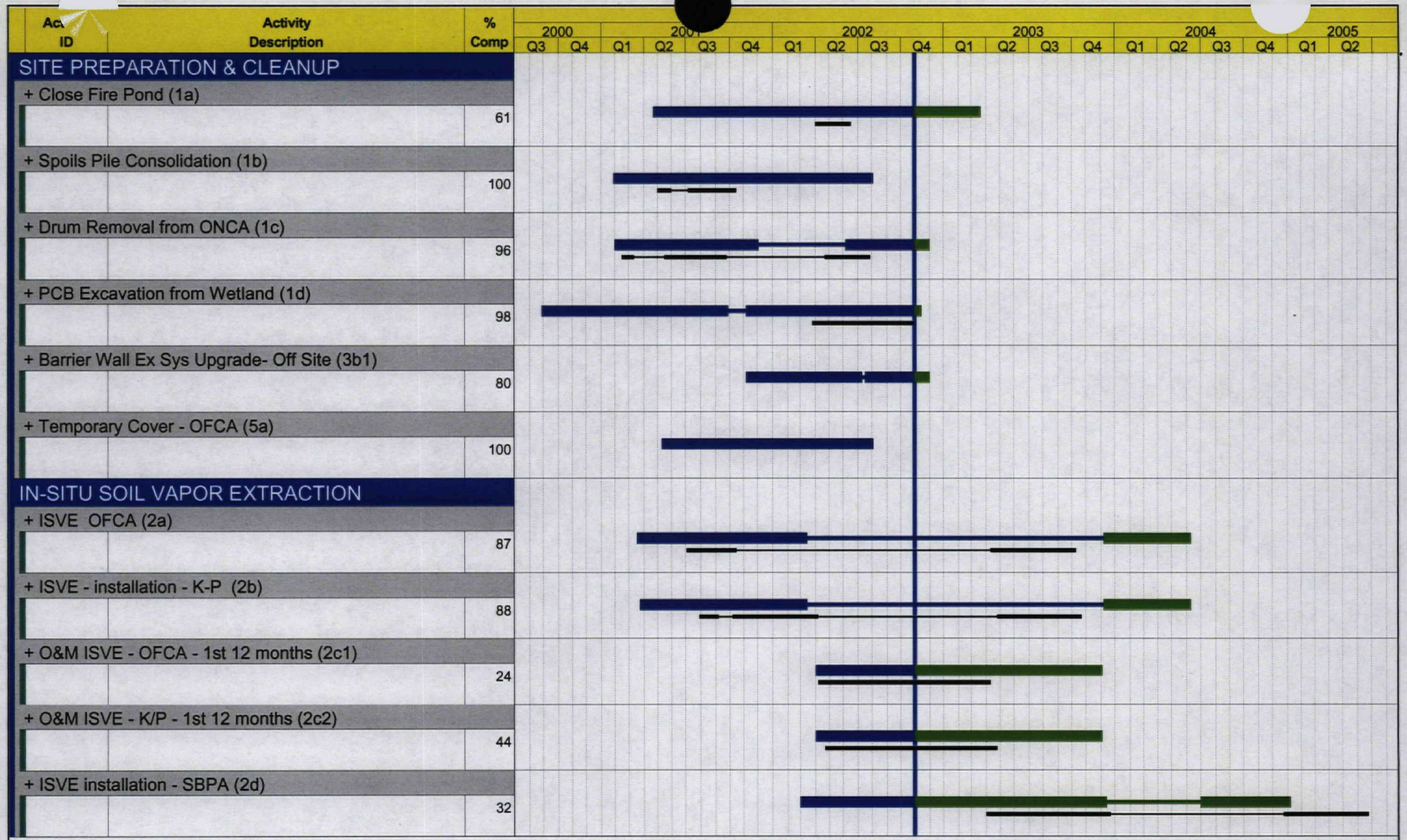


Data Date 01NOV02
Run Date 08NOV02 11:05

Early Bar
Target 1
Progress Bar
Critical Activity

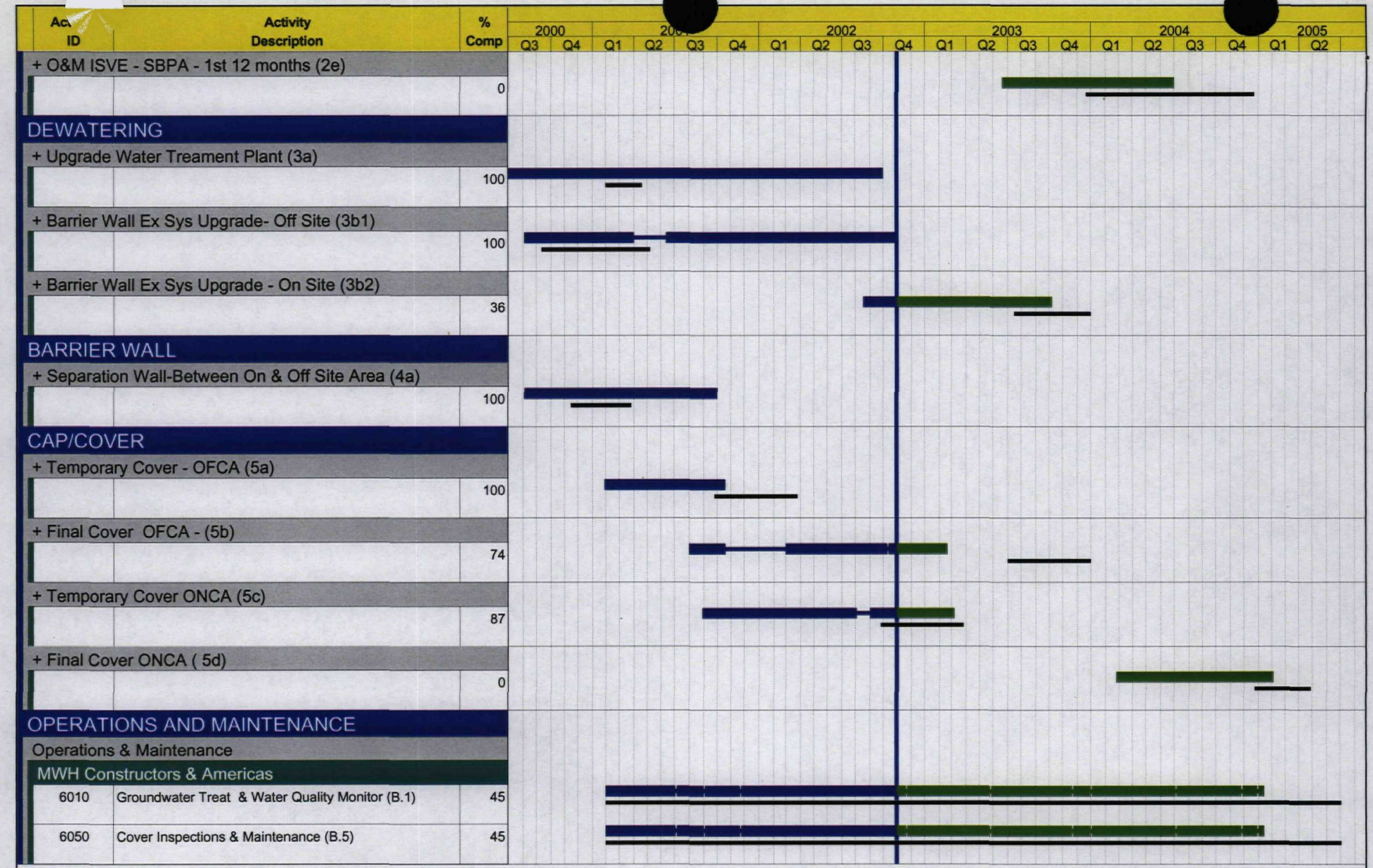
ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of October 2002 Report

MWH
MONTGOMERY WATSON HARZA



Data Date 01NOV02
Run Date 08NOV02 11:05

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of October 2002 Report

MWH
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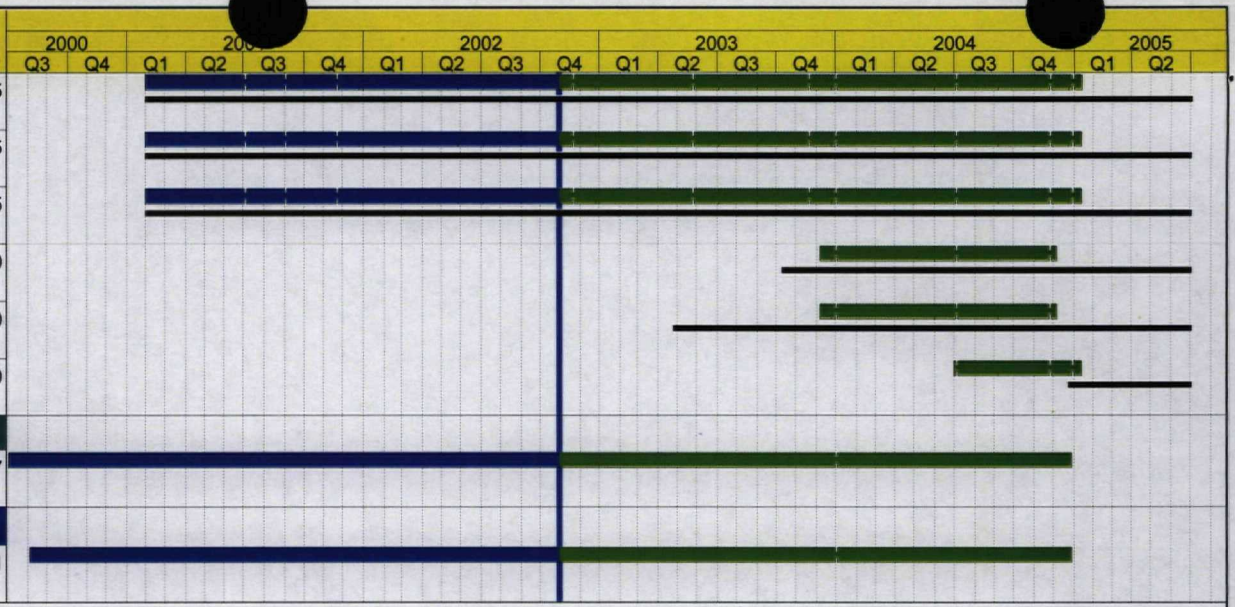
Act ID	Activity Description	% Comp
6060	Monitored Natural Attenuation (B.6)	45
6070	Groundwater, Air & Wetland Monitoring (B.7)	45
6080	Residential Well Monitoring (B.8)	45
6020	OFCA SVE sys O&M after 1st 12 months (B.2)	0
6030	K/P Area SVE Sys O&M after 1st 12 months (B.3)	0
6040	SBPA SVE Sys O&M after 1st 12 months (B.4)	0
+ MWH Americas		47
+ MANAGEMENT		51



Data Date 01NOV02
Run Date 08NOV02 11:05

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

Sheet 3 of 3

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of October 2002 Report

MWH
MONTGOMERY WATSON HARZA

Table 2.2
Summary of Effluent Analytical Results - Third Quarter 2002
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 64 9/26/02	Effluent Limits	Lab Reporting
pH	7.40	6-9	none
TSS	NS	30	10
BOD	NS	30	2
Arsenic	NS	50	3.4
Beryllium	NS	NE	0.2
Cadmium	NS	4.1	0.3
Manganese	NS	NE	10
Mercury	NS	0.02 (w/DL = 0.64)	0.64
Selenium	NS	8.2	4.3
Thallium	NS	NE	5.7
Zinc	NS	411	1.2
Benzene	ND	5	0.5
Acetone	2 JB/3 UBJ	6,800	3
2-Butanone	ND	210	3
Chloromethane	ND	NE	0.5
1,4-Dichlorobenzene	ND	NE	0.5
1,1-Dichloroethane	ND	NE	0.5
cis-1,2-Dichloroethene	ND	70	0.5
Ethylbenzene	ND	34	0.5
Methylene chloride	2 B/UBJ	5	0.6
Tetrachloroethene	0.09 J/	5	0.5
Trichloroethene	0.1 J/J	5	0.5
Vinyl chloride	ND	2	0.5
4-Methyl-2-pentanone	ND	15	3
bis (2-Chloroethyl) ether	NS	9.6	9.6
bis(2-Ethylhexyl) - phthalate	NS	6	6
4 - Methylphenol	NS	34	10
Isophorone	NS	50	10
Pentachlorophenol	NS	1	1
PCB/Aroclor-1016	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	NS	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:

Data has been validated in accordance with the Project QAPP (November 2001) and the U.S. EPA National Functional Guidelines for Organic Data Review

Shaded cells indicate discharge exceedances

pH data is expressed in S.U.

TSS and BOD5 data is expressed in mg/L

Metals, VOC, SVOC and PCB data is expressed in ug/L

ND = Not detected

NS = This analyte was not sampled or analyzed for

NE = No effluent limit established.

NA = Sample not analyzed for this compound

* = Approved SW-846 method is incapable of achieving effluent limit.

Suffix Definitions:

_/ = Data qualifier added by laboratory

/_ = Data qualifier added by data validator

B = Compound is also detected in the blank

E = Compound exceeds the upper level of calibration range of instrument

J = Result is detected below the reporting limit and is an estimated concentration

Q = Sample was analyzed out of the recommended holding time

R = Quality control indicates the data is not usable

JB = Analyte is detected in the compliance sample below the reporting limit and is an estimated concentration and the compound is also detected in the method blank resulting in a potential higl

U = Analyte is not detected at or above the indicated concentration

UB = Analyte is not detected at or above the indicated concentration due to blank contamination

UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection lim estimated value

D = Result obtained after diluting sample

MWH
MONTGOMERY WATSON HARZA

Note:
Res. well results included. need letter to homes w/ results.
KA. 12/03

✓ Letters KA. 1/7/03

December 9, 2002

Kevin Adler
Remedial Project Manager
Region V, Mail Code SR-J6
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Prabhakar Kasarabada
Project Manager
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: Progress Report – November 2002 Activities
ACS NPL Site RD/RA

Dear Messrs. Adler and Kasarabada:

This monthly progress report covers activities for the Remedial Design and Remedial Action (RD/RA) activities at the American Chemical Services, Inc. (ACS) National Priority List (NPL) Site in Griffith, Indiana (Site). The report has been prepared in accordance with Paragraph 40 of the Consent Decree entered January 9, 2001; it covers the activities undertaken at the Site during the month of November 2002. The number and letter in parentheses at the end of each heading provide a cross-reference to the remedial tasks listed in Appendix G of the Consent Decree.

CAPITAL COST ITEMS

In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (OFCA) (2.a.)
After operation of the ISVE system recommenced on November 4, 2002, the system was operational throughout the month of November. MWH continues to conduct regular monitoring of the system. The current operational period will provide MWH data with which to evaluate the initial ISVE system performance. Based on monitoring data, MWH will design, procure, and install the full-size system.

System monitoring data for the month of November 2002, are attached (Table 1).

Thermal Oxidizer/Scrubber System
MWH plans to conduct a comprehensive inspection of the unit in the upcoming months to ensure the further corrosion problems have not occurred.

27755 Diehl Road
Suite 300
Warrenville, Illinois
60555

Tel: 630-836 8900
Fax: 630 836 8959

Performance Standard Verification Plan (PSVP) Sampling

In accordance with the PSVP, the thermal oxidizer off-gas is sampled monthly during operation. Influent and effluent off-gas samples from the thermal oxidizer unit were last collected on September 30, 2002. The VOC analytical data from this sampling event is included as Table 2. The mass of VOCs discharged is less than three pounds per hour, indicating compliance with IDEM operating requirements. Due to a laboratory procedural error, the SVOC samples could not be analyzed. This SVOC sample could not be immediately resampled because the system was not in operation. The next SVOC sample was collected in conjunction with the November sampling event (collected November 14, 2002). Results from the November sampling event will be included in the next monthly status report.

ISVE System for Still Bottoms Pond Area (SBPA) (2.d.)

Boart Longyear & Associates (BLA) completed the installation of the ISVE wells in the SBPA of the On-Site Area on November 15. A total of 25 ISVE wells (four-inch diameter), 21 dual-phase extraction (DPE) wells (six-inch diameter) and six air sparge wells (1-inch diameter) were installed.

The three-inch diameter groundwater conveyance pipe previously installed by Hard Hat Services, Inc. was damaged at one location during the installation of the ISVE wells. This pipe was repaired and the pipe was successfully pressure tested on November 25 following the repair to confirm no other leaks existed in the three-inch line.

MWH began the installation of the conveyance piping for the SBPA ISVE system on November 21, 2002. This task will include the installation of groundwater extraction pumps in the DPE wells and connection to the existing groundwater conveyance pipe. The conveyance piping for vapor extraction will be connected to the SVE and DPE wells and run to the location of the ISVE blower shed. After each of the wells has been tapped, geotextile fabric will be installed across the area and vapor conveyance piping installed between each well and the future blower shed location. When the piping installation has been completed, gravel will be placed over the entire area as a temporary winter cover. Construction activities associated with this task are anticipated to be complete in January 2003.

MWH began preparations for the installation of the ISVE blower sheds in the SBPA. It is anticipated that two structures will be installed to house the system equipment and piping manifolds. Preparations for the construction of the foundation for the sheds included assembling pipe stubs during the week of November 25 to which the manifold system will be connected.

MWH has ordered the thermal oxidizer from Global Technologies/Anguil Environmental Systems for the SBPA ISVE system. The estimated delivery time is 14 to 16 weeks upon approval of the engineering design anticipated to be submitted to MWH in December.

Barrier Wall Extraction System Upgrades On-Site (3.b.2)

Actions related to this task, including installation of groundwater extraction pumps in the DPE wells, are occurring concurrent with the construction of the SBPA ISVE system and are summarized in that section.

Interim Cover of On-Site Area (5.c.)
The construction of the access road in the On-Site Area was completed by Hard Hat Services, Inc. (HHSI) on November 6, 2002. This completes the scope of work for Hard Hat Services, Inc. The remainder of interim cover (placement of the geotextile and gravel layers) will be installed concurrent with the installation of the ISVE and groundwater extraction conveyance piping.

Final Cover of Off-Site Area (5.d.)
The installation of the final cover for the Off-Site Area was completed in October. The Construction Completion Report for this task is being prepared and is scheduled to be submitted to the Agencies in January 2003.

PROJECT MANAGEMENT (6)

A copy of the updated construction schedule is attached. The current progress is shown as a thick bar and the baseline schedule (as included in the Consent Decree) is shown as a thinner line located beneath the current progress bar.

Standing weekly meetings are scheduled for Thursdays at 10 a.m. unless the day or time needs to be changed to accommodate the schedule of participants. During November 2002, weekly construction meetings were held at the Site on the 7th, 14th, and 21st. The meeting scheduled for November 28th was moved to December 2nd to accommodate the Thanksgiving holiday weekend. The minutes from each meeting were faxed to participants and the Agencies by the Tuesday following each meeting.

OPERATION & MAINTENANCE ITEMS

Treatment System Monitoring (B.1, 2, 3, 4)
The Groundwater Treatment Plant (GWTP) continued to operate as designed during the reporting period. The GWTP is currently treating approximately 25 gallons per minute (gpm) of influent water. This lower flow rate is due to the rate at which the extraction system can deliver water to the system at the current time. This rate has decreased as the water levels in the Off-Site Area approach the target water level of 626 feet above mean sea level (amsl) but is expected to increase when the upgrades to the BWES in the On-Site Area are completed and brought on-line. The On-Site Area Barrier Wall Extraction System (BWES), the Off-Site Area BWES, and the Perimeter Groundwater Containment System (PGCS) are currently bringing influent to the GWTP. Approximately 5 gpm is being pumped from the PGCS.

Data collected during weekly gauging of various monitoring wells, piezometers, and ISVE wells have been compiled and summarized in Figures 1 through 3 (attached).

The heat exchanger system for the activated sludge plant was installed on November 4, 2002. During the installation, the GWTP flow rate was decreased to 15 gpm. The insulation of the activated sludge plant and the heat exchanger system have been installed to improve the treatment efficiency of the aeration tank and activated sludge plant during the winter months. Initial

operation with the heat exchanger installed indicate temperatures in the activated sludge plant are approximately ten degrees higher than this time last year.

Pumping and control equipment for monitoring wells, MW-10C and MW-56 have been completed and operation of the pumping system began in November. Approximately one gpm is currently extracted from each of these wells.

Influent and effluent off-gas samples from the catalytic oxidizer unit were last collected on September 30, 2002. The VOC analytical data from this sampling event is included as Table 3. Since the catalytic oxidizer met the discharge requirements of less than three pounds VOCs per day during the eight initial rounds of sampling, the catalytic oxidizer will be sampled annually, in accordance with the IDEM regulations and the PSVP. The next sample is tentatively scheduled to be collected during June 2003.

The October 2002 GWTP effluent sample was collected on October 24 and was analyzed for pH, VOCs, BOD, TSS, SVOCs, metals, and PCBs. Analytical results are summarized in Table 4. No exceedences of the discharge limits were reported.

The November 2002 sample was collected on November 24 and will be analyzed for pH and VOCs. Analytical results will be included in a future monthly status report.

Groundwater, Air Quality, Wetland, and Monitoring (B.7)

MWH conducted the third quarter groundwater monitoring event during September 2002. Analytical results are attached as Table 5 and 6. The next round of sampling is scheduled for March 2003. It will be a full round with analysis of the full Target Compound List/Target Analyte List parameters.

Residential Well Water Quality Monitoring (B.8.)

The annual round of residential well sampling was completed during September. One residential well was resampled on October 24 in order to confirm the accuracy of the initial analytical results from the September sampling. The sampling results confirm that the residential wells are not affected by the site. Analytical results have been validated and are included in Table 7 and 8. The next residential sampling round is scheduled for September 2003.

REPORT SCHEDULE

This section summarizes reports that are in progress or have recently been submitted to or approved by the U.S. EPA and IDEM.

Reports Being Prepared

- **In-Situ Vapor Extraction (ISVE) System for Off-Site Containment Area (2.a.)** - the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in January 2003.

- **Final Cover in Off-Site Area (5.d)** – the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in January 2003.

- **Interim On-Site Cover, including Fire Pond Closure (5.c)** – the Construction Completion Report is being prepared and is scheduled to be submitted to the Agencies in February 2003.

- **Groundwater Treatment System Monitoring Report (B.1,2,3,4)** – the Groundwater Treatment System Quarterly Monitoring Report – Second Quarter 2002 is scheduled to be submitted to the Agencies in January 2003. The Groundwater Treatment System Quarterly Monitoring Report – Third Quarter 2002 is scheduled to be submitted to the Agencies in February 2003.

Reports Recently Submitted and Approved

- **PCB Sediment Excavation from Wetland (1.d.)** – the Construction Completion Report was submitted to the Agencies on July 1, 2002. The U.S. EPA responded with comments on August 20. MWH submitted a response to comments letter to the Agencies on September 23. The Agencies approved the CCR by letter on October 30, 2002 conditional upon incorporation of MWH's proposed revisions. The final version of the report was submitted to the Agencies on November 14, 2002.

Reports Previously Submitted Requiring Finalization

- **Drum Removal in On-Site Containment Area (1.c.)** – Agency comments regarding the draft report were received by email on November 4, 2002. The U.S. EPA, Black & Veatch, and MWH participated in a meeting on November 21, 2002 to discuss the comments. Draft responses were submitted via email on November 22, 2002. This report will be finalized upon hearing from the U.S. EPA regarding the responses.

- **Barrier Wall Extraction System (BWES) Upgrades (3.b.)** - Agency comments regarding the draft report were received by email on November 4, 2002. The U.S. EPA, Black & Veatch, and MWH participated in a meeting on November 21, 2002 to discuss the comments. Draft responses were submitted via email on November 22, 2002. This report will be finalized upon hearing from the U.S. EPA regarding the responses.

- **Interim Engineered Cover of Off-Site Area (5.a.)** – Agency comments regarding the draft report were received by email on November 4, 2002. The U.S. EPA, Black & Veatch, and MWH participated in a meeting on November 21, 2002 to discuss the comments. Draft responses were submitted via email on November 22, 2002. This report will be finalized upon hearing from the U.S. EPA regarding the responses.

The next monthly report will be forwarded to U.S. EPA and IDEM by January 10, 2003. If you have questions on the information provided in this monthly report, please contact me at (303) 410-4000.

Sincerely,

MWH

for

Joseph D. Adams, Jr., P.E.
Project Coordinator

Enclosure: Updated Schedule of Remedial Activities
Table 1 – ISVE System Operation Data, OFCA and KP Area Systems
Table 2 – Thermal Oxidizer (ME-205) Results for Method TO-14 (VOCs)
Table 3 – Catalytic Oxidizer (ME-106) Results for Method TO-14 (VOCs)
Table 4 – Summary of Effluent Analytical Results – Fourth Quarter 2002
Table 5 – Upper Aquifer Analytical Results – September 2002
Table 6 – Lower Aquifer Analytical Results – September 2002
Table 7 – Summary of Organic Compounds in Residential Wells – September 2002
Table 8 – Summary of Inorganic Compound Detections in Residential Wells – September 2002
Figure 1 – Off-Site Area Dewatering Progress - Piezometers
Figure 2 – OFCA Area Miscellaneous Wells
Figure 3 – On-Site Area Dewatering Progress

cc: Barbara Magel – Karaganis White & Magel, Ltd.
Mark Travers – Environ
Jim Vondracek - Ashland Chemical Company
Larry Campbell – Black & Veatch
Rob Adams – MWH
Peter Vagt – MWH
Travis Klingforth – MWH
FILE

CAD/RAA/PJV/TMK
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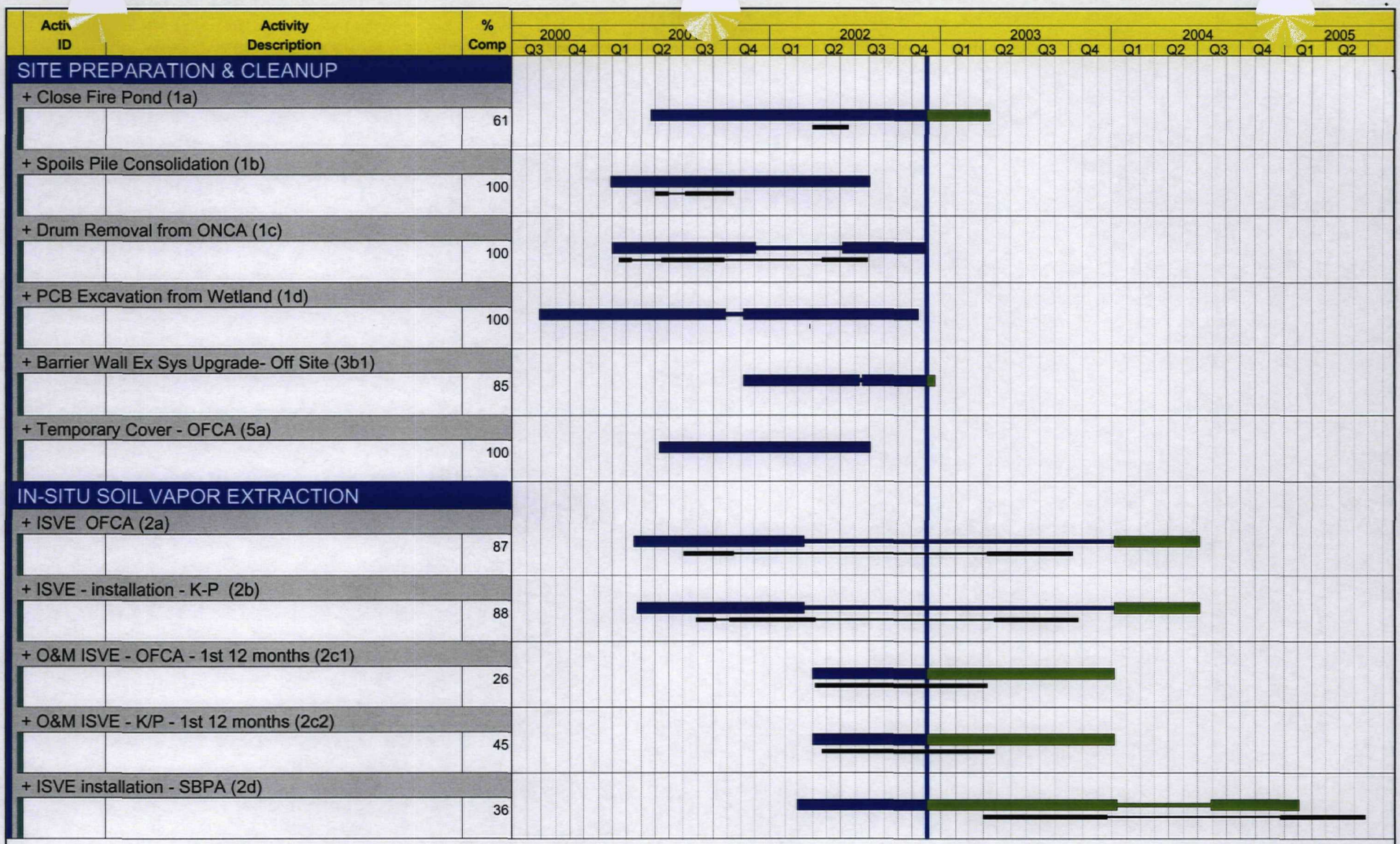

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Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of November 2002 Report

MWH
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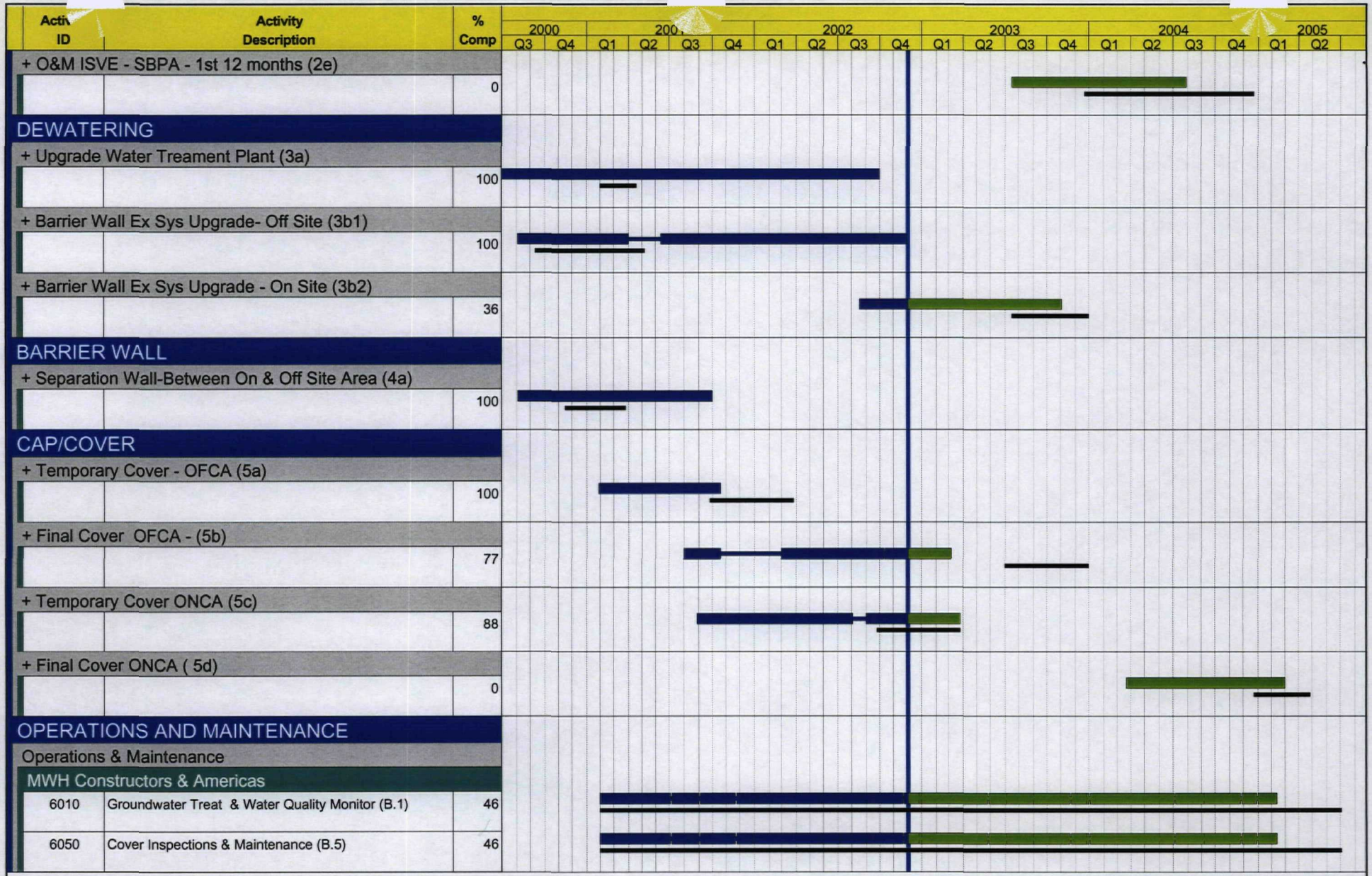

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Early Bar
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Progress Bar
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ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
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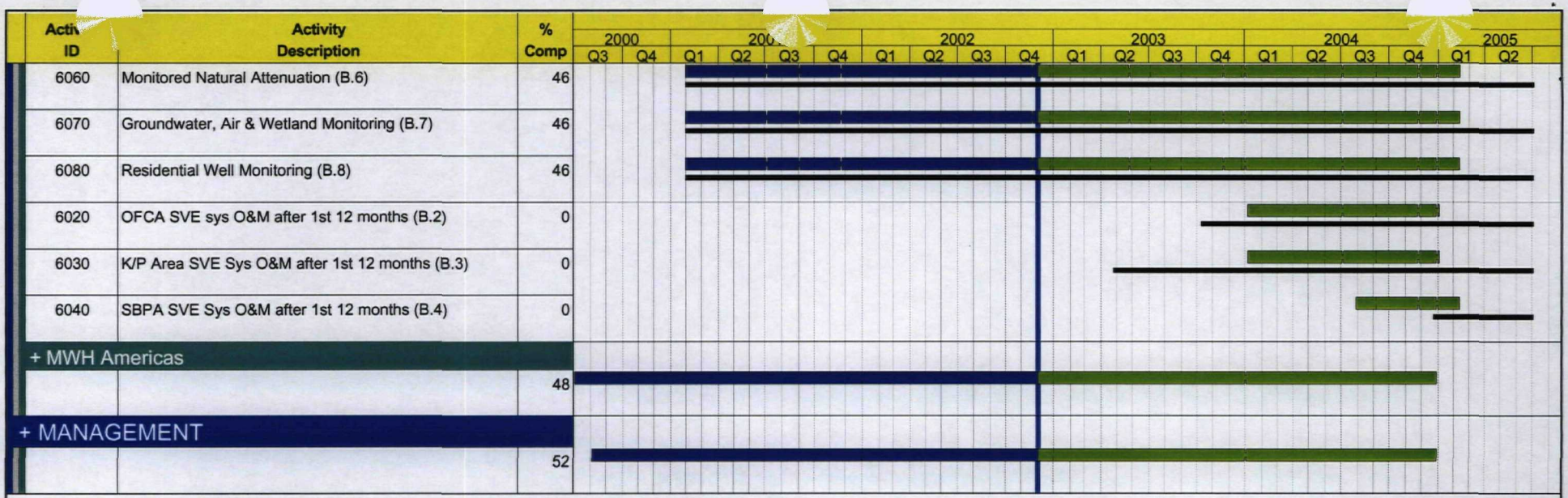
End of November 2002 Report

MWH
MONTGOMERY WATSON HARZA



Data Date 01DEC02
Run Date 09DEC02 16:42

Early Bar
Target 1
Progress Bar
Critical Activity

ACSL

ACS NPL SITE REMEDIAL ACTION

Current Progress (Bar)
vs
CD Schedule (line)

End of November 2002 Report

MWH
MONTGOMERY WATSON HARZA

Table 1.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)
SVE-01				
	11/5/02	0	22	2477
	11/6/02	0	21	2564
	11/7/02	Water	40	Water
	11/14/02	61	46	635
	11/21/02	61	48	Water
SVE-02				
	11/5/02	0	22	1766
	11/6/02	0	22	1734
	11/7/02	Water	40	Water
	11/14/02	0	42	940
	11/21/02	202	44	611
SVE-07				
	11/5/02	30	18	2027
	11/6/02	30	16	2143
	11/7/02	Water	32	Water
	11/14/02	19	37	385
	11/21/02	161	38	585
SVE-08				
	11/5/02	43	12	1627
	11/6/02	43	12	1624
	11/7/02	61	32	4064
	11/14/02	75	28	397
	11/21/02	82	30	600
SVE-09				
	11/5/02	43	21	Water
	11/6/02	43	21	Water
	11/7/02	193	38	3743
	11/14/02	194	40	600
	11/21/02	224	42	Water
SVE-12				
	11/5/02	0	20	1431
	11/6/02	0	16	1202
	11/7/02	31	26	Water
	11/14/02	0	40	544
	11/21/02	Water	38	775

Table 1.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)
SVE-14				
	11/5/02	0	22	3420
	11/6/02	0	20	3371
	11/7/02	31	36	5069
	11/14/02	43	40	1380
	11/21/02	0	43	1815
SVE-15				
	11/5/02	43	0	2412
	11/6/02	43	6	2731
	11/7/02	75	18	4029
	11/14/02	174	20	1350
	11/21/02	149	18	1640
SVE-18				
	11/5/02	61	20	Water
	11/6/02	0	20	2896
	11/7/02	33	40	3953
	11/14/02	0	42	1730
	11/21/02	0	44	2070
SVE-19				
	11/5/02	61	20	Water
	11/6/02	43	18	2497
	11/7/02	Water	28	Water
	11/14/02	75	30	200
	11/21/02	75	30	430
SVE-22				
	11/5/02	61	15	4113
	11/6/02	43	8	4159
	11/7/02	86	22	1966
	11/14/02	106	22	1375
	11/21/02	86	22	2100
SVE-24				
	11/5/02	61	14	4357
	11/6/02	43	15	4500
	11/7/02	75	28	2315
	11/14/02	106	33	1470
	11/21/02	75	30	2065

Table 1.
ISVE System Operation Data
OFCA and KP Area Systems

Well ID	Date	Flow (cfm)	Vac (" H_2O)	VOCs (ppm)
SVE-27				
	11/5/02	0	16	3719
	11/6/02	0	14	3671
	11/7/02	0	32	1798
	11/14/02	0	38	1430
	11/21/02	0	40	1920
SVE-33				
	11/5/02	0	6	3869
	11/6/02	30	18	4617
	11/7/02	86	28	2286
	11/14/02	97	30	1441
	11/21/02	86	31	1750
SVE-35				
	11/5/02	43	4	5901
	11/6/02	30	8	5460
	11/7/02	61	15	1805
	11/14/02	61	22	1465
	11/21/02	75	20	1900
SVE-37				
	11/5/02	0	18	5207
	11/6/02	43	46	5438
	11/7/02	61	28	1629
	11/14/02	75	35	1500
	11/21/02	61	34	2265
SVE-41				
	11/5/02	43	4	4817
	11/6/02	43	18	4892
	11/7/02	114	24	3221
	11/14/02	137	26	1615
	11/21/02	136	27	2025

"Water" - water present in vapor stream, preventing data collection
cfm = cubic feet per minute
"H_2O = inches of water
ppm = parts per million

Notes:
1. Data shown from active wells only.

Table 2
Thermal Oxidizer Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 10 - Sampled 9/30/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low (%)	High (%)	Average (%)
Method TO-14							
Chloromethane	ppbv	ND	ND	61	NC	NC	NC
Vinyl Chloride	ppbv	5,500	5,300	20	99.64%	99.62%	99.63%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	2,800	2,800	1.0	100.00%	100.00%	100.00%
1,1-Dichloroethene	ppbv	510 J/J	450 J/J	30	NC	NC	NC
Methylene Chloride	ppbv	180,000	160,000	30	99.98%	100.00%	99.99%
1,1-Dichloroethane	ppbv	26000	24,000	0.82	100.00%	100.00%	100.00%
cis-1,2-Dichloroethene	ppbv	31,000	27,000	5.7	100.00%	100.00%	100.00%
Chlororform	ppbv	4,800	4,200	4.3	100.00%	100.00%	100.00%
1,1,1-Trichloroethane	ppbv	96,000	86,000	0.59 J/J	NC	NC	NC
Carbon Tetrachloride	ppbv	ND	ND	1.1	NC	NC	NC
Benzene	ppbv	93,000	82,000	43	99.95%	99.95%	99.95%
1,2-Dichloroethane	ppbv	2,000	1,600	0.42 J/J	NC	NC	NC
Trichloroethene	ppbv	50,000	43,000	14	100.00%	100.00%	100.00%
1,2-Dichloropropane	ppbv	790 J/J	780 J/J	ND	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	0.33 J/J	NC	NC	NC
Toluene	ppbv	440,000	390,000	13	100.00%	100.00%	100.00%
trans-1,3-Dichloropropene	ppbv	ND	ND	0.32 J/J	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	41,000	36,000	18	99.95%	99.96%	99.95%
Chlorobenzene	ppbv	ND	ND	1.7	NC	NC	NC
Ethylbenzene	ppbv	38,000	34,000	0.54 J/J	NC	NC	NC
m,p-Xylene	ppbv	140,000	130,000	1.9	100.00%	100.00%	100.00%
o-Xylene	ppbv	38,000	34,000	0.65 J/J	NC	NC	NC
Styrene	ppbv	ND	ND	1.7	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	130,000	110,000	56	99.52%	99.96%	99.74%
Carbon Disulfide	ppbv	1,400 J/J	940 J/J	1.0 J/J	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	2.1 J/J	NC	NC	NC
2-Butanone (MEK)	ppbv	130,000	120,000	14	99.99%	99.99%	99.99%
Bromodichloromethane	ppbv	ND	ND	3.3	NC	NC	NC
4-Methyl-2-pentanone	ppbv	22,000	20,000	0.45 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	4.8	NC	NC	NC
Bromoform	ppbv	ND	ND	5.3	NC	NC	NC
Total	**ppbv**	**1,444,100**	**1,309,900**	**330.62**	**99.97%**	**99.98%**	**99.98%**
Total	**lb/hr**	**18.192**	**16.222**	**0.004**	**NC**	**NC**	**NC**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
lb/hr - pounds per hour
Destruction efficiency is not calculated where influent and/or effluent values are estimated.
Total VOCs in lb/hr calculated based on 850 acfm.

Qualifiers:
J - Result is estimated

Table 3
Catalytic Oxidizer Results for Method TO-14 (VOCs)
Thermal and Catalytic Oxidizer Sampling
American Chemical Service, Griffith, Indiana

		Round 10 - Sampled 9/30/02					
		Analytical Data			Destruction Efficiency		
Compounds	Units	Influent IN1	Influent IN2	Effluent EF1	Low	High	Average
Method TO-14							
Chloromethane	ppbv	ND	ND	170	NC	NC	NC
Vinyl Chloride	ppbv	2,400	2,900	410	82.92%	85.86%	84.39%
Bromomethane	ppbv	ND	ND	ND	NC	NC	NC
Chloroethane	ppbv	2,400	2,600	220	90.83%	91.54%	91.19%
1,1-Dichloroethene	ppbv	ND	ND	49	NC	NC	NC
Methylene Chloride	ppbv	3,200	3,300	550	82.81%	83.33%	83.07%
1,1-Dichloroethane	ppbv	870	930	69	92.07%	92.58%	92.32%
cis-1,2-Dichloroethene	ppbv	6,600	7,200	720	90.00%	89.09%	89.55%
Chlororform	ppbv	50 J/J	48 J/J	4.4 J/J	NC	NC	NC
1,1,1-Trichloroethane	ppbv	600	710	32	94.67%	95.49%	95.08%
Carbon Tetrachloride	ppbv	ND	ND	ND	NC	NC	NC
Benzene	ppbv	30,000	36,000	4,000	86.67%	88.89%	87.78%
1,2-Dichloroethane	ppbv	ND	240	ND	NC	NC	NC
Trichloroethene	ppbv	190	220	27	85.79%	87.73%	86.76%
1,2-Dichloropropane	ppbv	34 J/J	48 J/J	2.8 J/J	NC	NC	NC
cis-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
Toluene	ppbv	11,000	13,000	940	91.45%	92.77%	92.11%
trans-1,3-Dichloropropene	ppbv	ND	ND	ND	NC	NC	NC
1,1,2-Trichloroethane	ppbv	ND	ND	ND	NC	NC	NC
Tetrachloroethene	ppbv	140	180	49	65.00%	72.78%	68.89%
Chlorobenzene	ppbv	730	850	120	83.56%	88.04%	88.04%
Ethylbenzene	ppbv	1,700	2,000	110	93.53%	94.50%	94.01%
m,p-Xylene	ppbv	8,000	9,500	470	94.13%	95.05%	94.59%
o-Xylene	ppbv	1,900	2,300	110	94.21%	95.22%	94.71%
Styrene	ppbv	ND	ND	30	NC	NC	NC
1,1,2,2-Tetrachloroethane	ppbv	ND	ND	ND	NC	NC	NC
Acetone	ppbv	1,000	1,100	160	84.00%	85.45%	84.73%
Carbon Disulfide	ppbv	ND	ND	ND	NC	NC	NC
trans-1,2-Dichloroethene	ppbv	ND	ND	56	NC	NC	NC
2-Butanone (MEK)	ppbv	480 J/J	480 J/J	50 J/J	NC	NC	NC
Bromodichloromethane	ppbv	ND	ND	ND	NC	NC	NC
4-Methyl-2-pentanone	ppbv	360 J/J	370 J/J	19 J/J	NC	NC	NC
2-Hexanone	ppbv	ND	ND	ND	NC	NC	NC
Dibromochloromethane	ppbv	ND	ND	ND	NC	NC	NC
Bromoform	ppbv	ND	ND	ND	NC	NC	NC
Total	**ppbv**	**68,200**	**79,900**	**4,000**	**94.13%**	**94.99%**	**94.56%**
Total	**lb/hr**	**0.261**	**0.306**	**0.029**	**NC**	**NC**	**NC**

Notes:
_/ - Laboratory data qualifier
/_ - Data validation qualifier
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
Destruction efficiency is not calculated where influent and/or effluent values are estimated.
Total VOCs in lb/hr calculated based on 270 acfm.

Qualifiers:
J - Result is estimated

Table 4
Summary of Effluent Analytical Results - Fourth Quarter 2002
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 65 10/24/02	Effluent Limits	Lab Reporting
pH	7.55	6-9	none
TSS	ND	30	10
BOD	4	30	2
Arsenic	ND	50	3.4
Beryllium	ND	NE	0.2
Cadmium	ND	4.1	0.3
Manganese	15.9	NE	10
Mercury	ND	0.02 (w/DL = 0.64)	0.64
Selenium	ND	8.2	4.3
Thallium	ND	NE	5.7
Zinc	1.9 B/	411	1.2
Benzene	ND	5	0.5
Acetone	1 JB/3 UJB	6,800	3
2-Butanone	ND	210	3
Chloromethane	ND	NE	0.5
1,4-Dichlorobenzene	ND	NE	0.5
1,1-Dichloroethane	ND	NE	0.5
cis-1,2-Dichloroethene	ND	70	0.5
Ethylbenzene	ND	34	0.5
Methylene chloride	1 B/	5	0.6
Tetrachloroethene	ND	5	0.5
Trichloroethene	ND	5	0.5
Vinyl chloride	ND	2	0.5
4-Methyl-2-pentanone	ND	15	3
bis (2-Chloroethyl) ether	ND	9.6	9.6
bis(2-Ethylhexyl) - phthalate	ND	6	6
4 - Methylphenol	ND	34	10
Isophorone	ND	50	10
Pentachlorophenol	ND	1	1
PCB/Aroclor-1016	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	ND	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	ND	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:
Data has been validated in accordance with the Project QAPP (November 2001) and the U.S. EPA National Functional Guidelines for Organic Data Review
Shaded cells indicate discharge exceedances
pH data is expressed in S.U.
TSS and BOD5 data is expressed in mg/L
Metals, VOC, SVOC and PCB data is expressed in ug/L
ND = Not detected
NS = This analyte was not sampled or analyzed for
NE = No effluent limit established.
NA = Sample not analyzed for this compound
* = Approved SW-846 method is incapable of achieving effluent limit.

Suffix Definitions:
_/ = Data qualifier added by laboratory
/_ = Data qualifier added by data validator
B = Compound is also detected in the blank
E = Compound exceeds the upper level of calibration range of instrument
J = Result is detected below the reporting limit and is an estimated concentration
Q = Sample was analyzed out of the recommended holding time
R = Quality control indicates the data is not usable
JB = Analyte is detected in the compliance sample below the reporting limit and is an estimated concentration and the compound is also detected in the method blank resulting in a potential high
U = Analyte is not detected at or above the indicated concentration
UB = Analyte is not detected at or above the indicated concentration due to blank contamination
UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection limi estimated value
D = Result obtained after diluting sample

Table 5
Upper Aquifer Analytical Results - September 2002
American Chemical Service NPL Site
Griffith, Indiana

	MW-06			MW-11			MW-14			MW-15			MW-17			MW-19		
	Interior			Upgradient			Downgradient			Downgradient			Upgradient			Interior		
Parameter (ug/L)	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*
VOCs																		
Benzene	5	U/		**0.9**	JB/UB	*10*	5	U/		**5**		*10*	5	U/		**5**		*10*
Chloroethane	5	U/		5	U/		5	U/		**2**	J/	*10*	5	U/		**13**		*20*
Tetrachloroethene	5	U/		5	U/		5	U/		5	U/		**1**	J/	*10*	5	U/	
Trichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,2-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
cis-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
trans-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Vinyl Chloride	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	

Notes:
ug/L = micrograms per liter.
BV = Baseline Value (only provided for detected compounds)
X / = Data qualifier added by laboratory
/*X* = Data qualifier added by data validator
U = Compound was analyzed for but not detected
J = Estimated value; concentration is below reporting limit
B = Indicates analyte detected in associated blank
D = Results based on diluted sample
UB = Analyte is not detected at or above the indicated concentration due to blank contamination
Bold result indicates the compound was detected

Bold and Boxed results indicates an exceedance of the baseline value of that compound.

CAS/cas/
J:\209\0603 ACS\0304 GW Monitoring\Sept 2002\T4-UpperAquifer results.xls
209063.030401

Table 5
Upper Aquifer Analytical Results - September 2002
American Chemical Service NPL Site
Griffith, Indiana

Parameter (ug/L)	MW-42 Downgradient Sep-02		BV	MW-43 Downgradient Sep-02		BV	MW-44 Downgradient Sep-02		BV	MW-45 Interior Sep-02		BV	MW-48 Interior Sep-02		BV	MW-49 Interior Sep-02		BV
VOCs																		
Benzene	5	U/		5	U/		5	U/		**8**		*1,045*	**1,300**	D/B	*9,500*	**570**	D/B	*6,750*
Chloroethane	5	U/		5	U/		5	U/		**13**		*215*	**32**		*1000*	60		*715*
Tetrachloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Trichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,2-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
cis-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
trans-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Vinyl Chloride	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	

Notes:
ug/L = micrograms per liter.
BV = Baseline Value (only provided for detected compounds)
X/ = Data qualifier added by laboratory
/X = Data qualifier added by data validator
U = Compound was analyzed for but not detected
J = Estimated value; concentration is below reporting limit
B = Indicates analyte detected in associated blank
D = Results based on diluted sample
UB = Analyte is not detected at or above the indicated concentration due to blank contamination
Bold result indicates the compound was detected
Bold and Boxed results indicates an exceedance of the baseline value of that compound.

CAS/cas/
J:\209\0603 ACS\0304 GW Monitoring\Sept 2002\T4-UpperAquifer results.xls
209063.030401

Table 6
Lower Aquifer Analytical Results - September 2002
American Chemical Service NPL Site
Griffith, Indiana

	MW-08			MW-09R			MW-10C			MW-23			MW-28			MW-29			MW-30		
	Downgradient			Interior			Interior			Downgradient			Upgradient			Interior			Downgradient		
Parameter (ug/L)	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*
VOCs																					
Benzene	5	U/		**9**		*310*	**370**	D/B	*150*	5	U/		5	U/		**1**	J/	10	5	U/	
Chloroethane	5	U/		**130**	D/	*2,900*	**380**	D/	*420*	5	U/		5	U/		**13**		*10*	5	U/	
Tetrachloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Trichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,2-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
cis-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
trans-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Vinyl Chloride	5	U/		5	U/		**0.5**	J/	*129*	5	U/		5	U/		5	U/		5	U/	

Notes:
ug/L = micrograms per liter.
BV = Baseline Value (only provided for detected compounds)
*BV** = Baseline study not completed for this well
NA = Not Analyzed
X/ = Data qualifier added by laboratory
/X = Data qualifier added by data validator
U = Compound was analyzed for but not detected
J = Estimated value; concentration is below reporting limit
B = Indicates analyte detected in associated blank
D = Results based on diluted sample
UB = Analyte is not detected at or above the indicated concentration due to blank contamination
Bold result indicates the compound was detected
Bold and Boxed results indicates the an exceedance of the baseline value of that compound.

CAS/cas/
J:\209\0603 ACS\0304 GW Monitoring\Sept 2002\T5-LowerAquifer results.xls
2090603.030401

Table 6
Lower Aquifer Analytical Results - September 2002
American Chemical Service NPL Site
Griffith, Indiana

	MW-31			MW-32			MW-33			MW-51			MW-52			MW-53			MW-54R		
	Downgradient			Downgradient			Downgradient			Downgradient			Downgradient			Downgradient			Downgradient		
Parameter (ug/L)	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*	Sep-02		*BV*
VOCs																					
Benzene	5	U/		5	U/		5	U/		5	U/		5	U/		**5**		*10*	**1**	J/	*10*
Chloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Tetrachloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Trichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,1-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
1,2-Dichloroethane	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
cis-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
trans-1,2-Dichloroethene	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	
Vinyl Chloride	5	U/		5	U/		5	U/		5	U/		5	U/		5	U/		5	U/	

Notes:
ug/L = micrograms per liter.
BV = Baseline Value (only provided for detected compounds)
*BV** = Baseline study not completed for this well
NA = Not Analyzed
X/ = Data qualifier added by laboratory
/X = Data qualifier added by data validator
U = Compound was analyzed for but not detected
J = Estimated value; concentration is below reporting limit
B = Indicates analyte detected in associated blank
D = Results based on diluted sample
UB = Analyte is not detected at or above the indicated concentration due to blank contamination
Bold result indicates the compound was detected

Bold and Boxed results indicates the an exceedance of the baseline value of that compound.

Table 6
Lower Aquifer Analytical Results - September 2002
American Chemical Service NPL Site
Griffith, Indiana

Parameter (ug/L)	MW-55 Downgradient Sep-02		BV	MW56 Interior Sep-02		BV*
VOCs						
Benzene	5	U/		**460**	D/	
Chloroethane	5	U/		**6**		
Tetrachloroethene	5	U/		5	U/	
Trichloroethene	5	U/		5	U/	
1,1-Dichloroethane	5	U/		5	U/	
1,1-Dichloroethene	5	U/		5	U/	
1,2-Dichloroethane	5	U/		5	U/	
cis-1,2-Dichloroethene	5	U/		5	U/	
trans-1,2-Dichloroethene	5	U/		5	U/	
Vinyl Chloride	5	U/		5	U/	

Notes:
ug/L = micrograms per liter.
BV = Baseline Value (only provided for detected compounds)
*BV** = Baseline study not completed for this well
NA = Not Analyzed
X/ = Data qualifier added by laboratory
/X = Data qualifier added by data validator
U = Compound was analyzed for but not detected
J = Estimated value; concentration is below reporting limit
B = Indicates analyte detected in associated blank
D = Results based on diluted sample
UB = Analyte is not detected at or above the indicated concentration due to blank contamination
Bold result indicates the compound was detected

Bold and Boxed results indicates the an exceedance of the baseline value of that compound.

Table 7
Summary of Organic Compound Detections in Residential Wells - September 2002
American Chemical Service NPL Site
Griffith, Indiana

Parameter	U.S. EPA MCL	PW-B Sep-02		RL	PW-C Sep-02		RL	PW-D Sep-02		RL	PW-T Sep-02		RL	PW-Y Sep-02		DL
Volatile Organic Compounds																
Acetone		2.0	JB/UB	3	2	JB/UB	3	2	JB/UB	3	3.0	B/UB	3	2	JB/UB	3
Bromomethane								0.1	JB/UB	0.5	0.1	JB/UB	0.5			
Chlorobenzene	100				0.03	J/	0.5									
Chloromethane		0.3	J/UB	0.5	0.1	J/UB	0.5	0.3	JB/UB	0.5				0.4	JB/UB	0.5
Methylene Chloride		0.5	B/UB	0.5	0.5	B/UB	0.5	0.5	B/UB	0.5	0.5	JB/UB	0.5	0.6	B/UB	0.5
Toluene	1,000	0.1	JB/UB	0.5	0.2	JB/UB	0.5	0.1	JB/UB	0.5	0.2	JB/UB	0.5	0.1	JB/UB	0.5
Xylene (total)	10,000	0.07	JB/UB	0.5				0.09	JB/UB	0.5				0.09	JB/UB	0.5
Semi-volatile Organic Compounds		All ND			All ND			All ND			All ND			All ND		
PCBs/Pesticides		All ND			All ND			All ND			All ND			All ND		

Garmon Gregory Floyd Rucinski Augstgen

Notes:
All results in micrograms per liter (ug/L).
MCL = Maximum Contaminant Level
RL = Reporting Limit
ND = Not detected
X/ = Data qualifier added by laboratory
/X = Data qualifier added by validation
J = Estimated value; concentration detected is below reporting limit
B = Indicates analyte detected in laboratory blank
UB = Analyte is not detected at or above the indicated concentration due to blank contamination.
A blank cell indicates parameter not detected.

CAS/cas/
J:\209\0603\0305\PWorganicresults2002.xls
2090603.030501

Table 8
Summary of Inorganic Compound Detections in Residential Wells - September 2002
American Chemical Services NPL Site
Griffith, Indiana

Analyte	Sample Location and Concentration (ug/L)										MCLs (ug/L)
	PW-B		PW-C		PW-D		PW-T		PW-Y		
Aluminum									8.1	J/UB	NA
Antimony	3.4	J/UB	3.4	J/UB	3.0	J/UB	3.1	J/UB			6
Arsenic											50
Barium	131	/B	157	/B	152	/B	152	/B	152	/B	2,000
Beryllium											4
Cadmium											5
Calcium	87,300		84,700		89,800		90,000		85,600		NA
Chromium	0.65	J/UB	0.49	J/UB	1.2	J/UB					100
Cobalt											NA
Copper					1.7	J/UB	4	J/UB	1.1	J/UB	1,300
Cyanide											200
Iron	2,820		2,350		2,250		2,360		3,480		NA
Lead					1.8	J/					15
Magnesium	41,200	/B	48,100	/B	47,400	/B	49,100	/B	46,400	/B	NA
Manganese	57.7		33.3		30.4		32.6		35.4		NA
Mercury											2
Nickel											NA
Potassium	2,270	/B	2,840	/B	2,960	/B	3,110	/B	3290	/B	NA
Selenium											50
Silver											NA
Sodium	15,900	E/	17,300	E/	17,100	E/	19,600	E/	23,100	E/	NA
Thallium											2
Vanadium											NA
Zinc	12.4	J/B	5.5	J/UB	14.7	J/B	33.4	/B	13.4	J/B	NA

RL
see
Lee Hans
for
"PQL"

Notes:

ug/L = micrograms per liter

Blank cell indicates analyte not detected

NA = MCL does not exist for this analyte

X / = Data qualifier added by laboratory

/*X* = Data qualifier added by validation

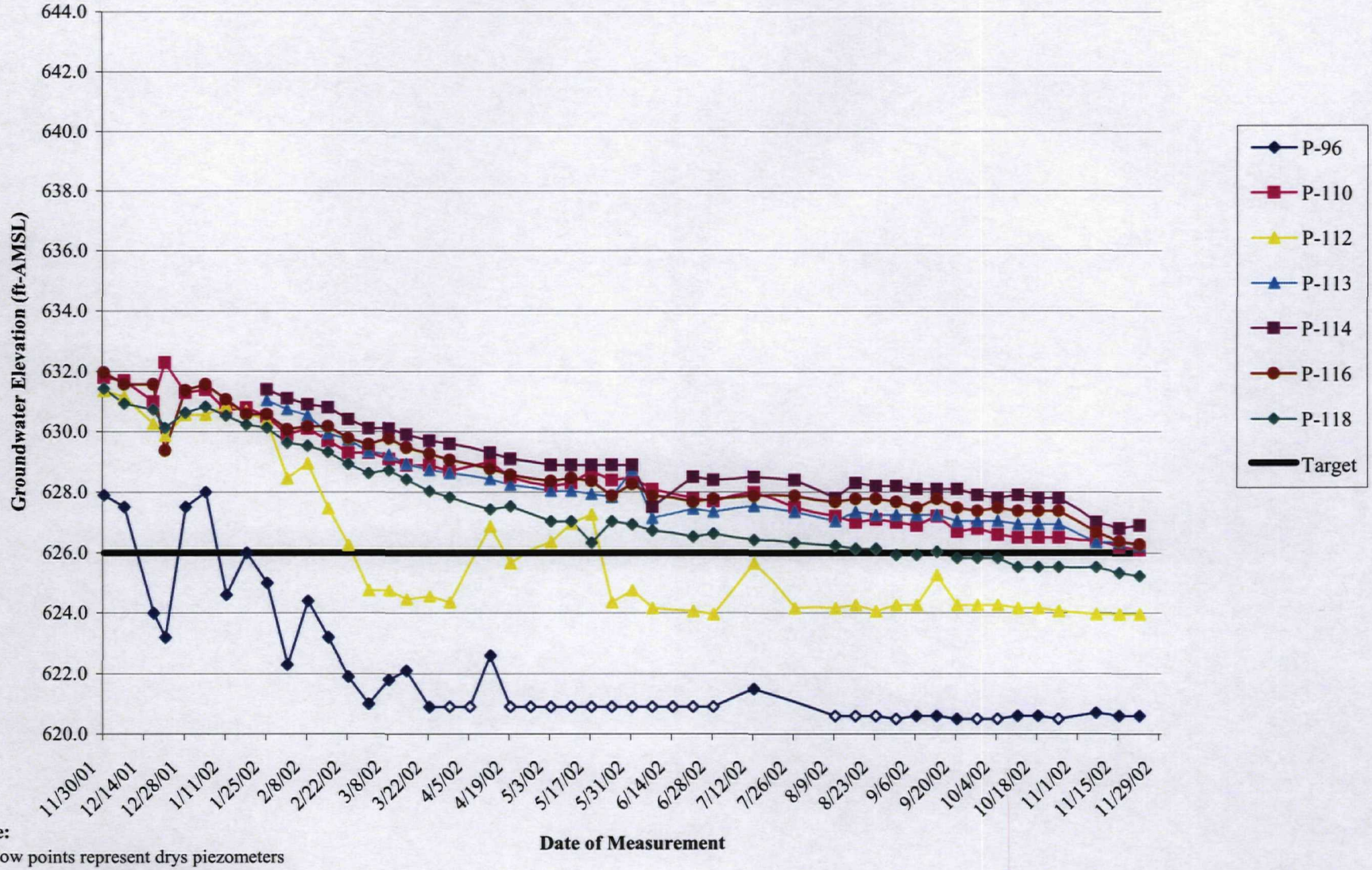
J = Compound was detected but at concentrations below the Contract Required Detection Limit. It is considered an estimated concentration (reported as 'B' flag by lab)

E = Concentration is estimated due to chemical or physical interference effect during analysis.

B = Indicates analyte detected in laboratory blank

UB = Analyte is not detected at or above the indicated concentration due to blank contamination.

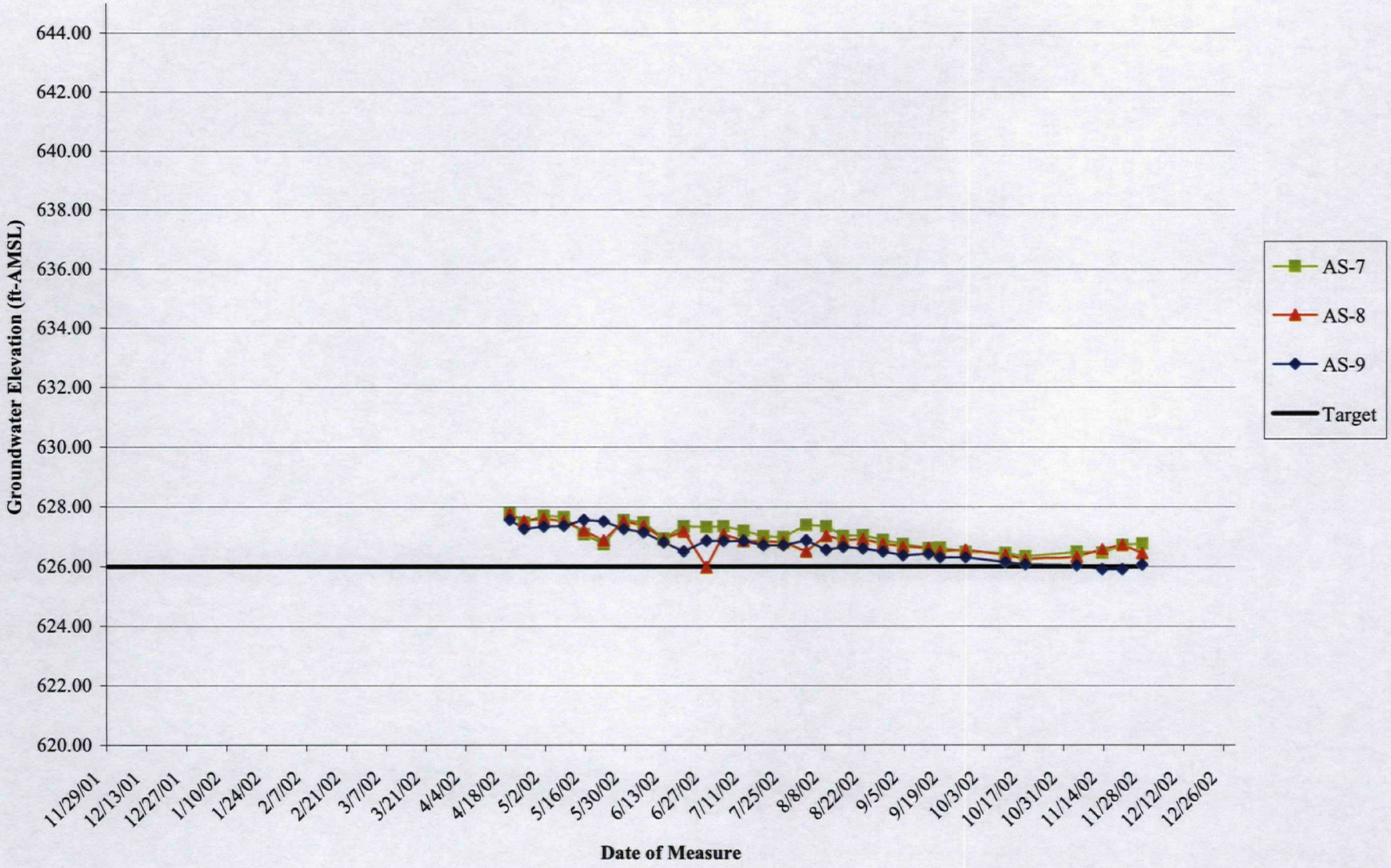
Figure 1
Off-Site Area Dewatering Progress - Piezometers
Groundwater Monitoring
ACS NPL Site
Griffith, Indiana



Note:
Hollow points represent drys piezometers
(data used for graphing purposes only).

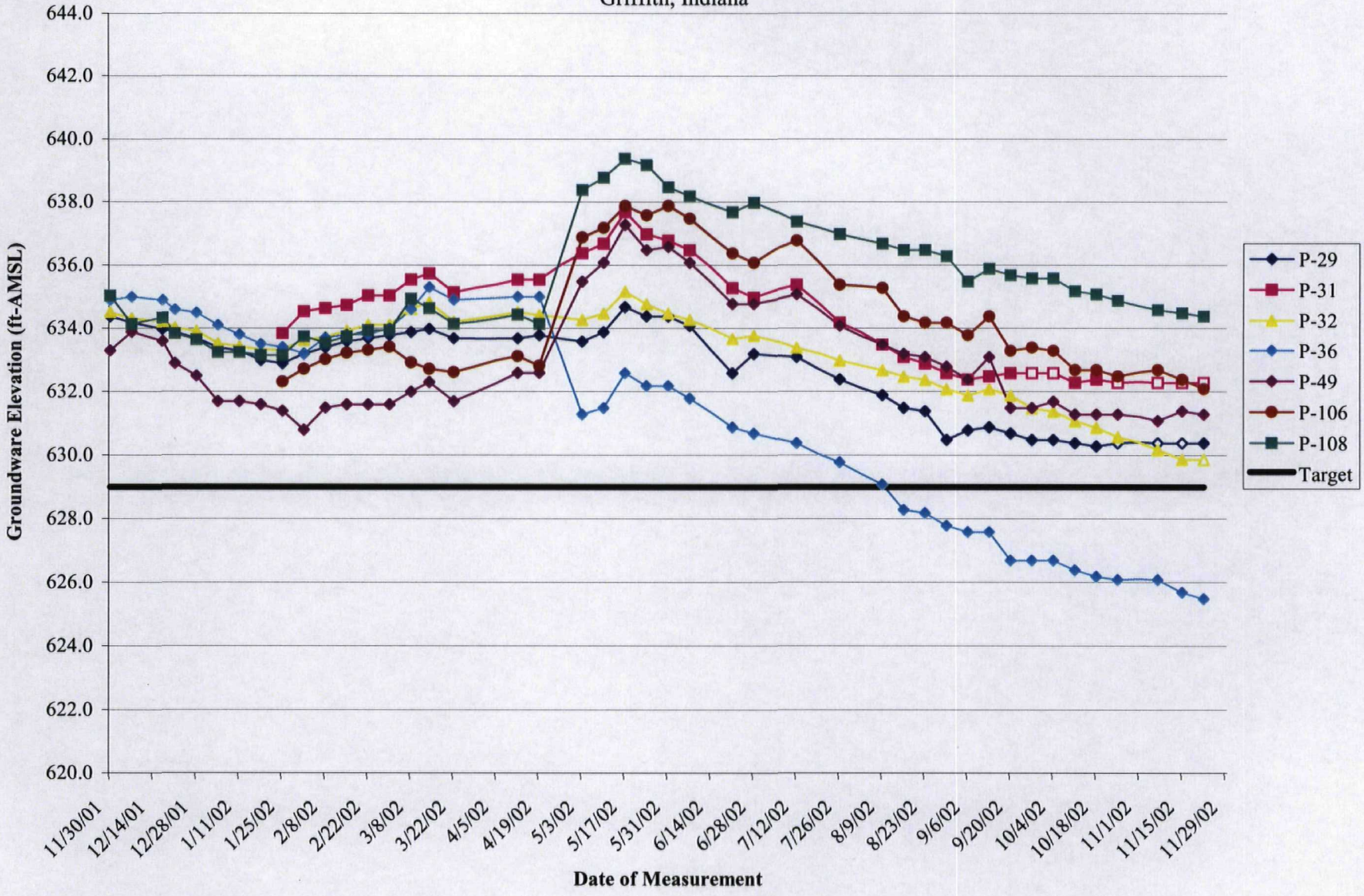
TMK/RHS
J:/20[redacted]/0301/BWES Data/BWES Performance.newest.xls/Off-Site Chart

Figure 2
OFCA Area Miscellaneous Wells
Groundwater Monitoring
ACS NPL Site
Griffith, Indiana



RHS
J:/20[redacted]1/0113/Data Forms/SVE GW Monitoring.newest-improved.xls/Drawing 4 A'

Figure 3
On-Site Area Dewatering Progress
ACS NPL Site
Griffith, Indiana



TMK/RHS
J:/20[redacted]/0301/BWES Data/BWES Performance.newest.xls/On-Site Chart